



SERVICE MANUAL



HS Series Slicer

HS6	ML-136244
HS6N	ML-136245
HS7	ML-136248
HS7N	ML-136249
HS8	ML-136250
HS8N	ML-136251
HS9	ML-136252
HS9N	ML-136253

- NOTICE -

This Manual is prepared for the use of trained Hobart Service Technicians and should not be used by those not properly qualified.

This manual is not intended to be all encompassing. If you have not attended a Hobart Service School for this product, you should read, in its entirety, the repair procedure you wish to perform to determine if you have the necessary tools, instruments and skills required to perform the procedure. Procedures for which you do not have the necessary tools, instruments and skills should be performed by a trained Hobart Service Technician.

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GENERAL

INTRODUCTION

This manual is for the Hobart HS Series Slicer. Procedures in this manual will apply to all models unless specified.

All information, illustrations and specifications contained in this manual are based on the latest product information available at the time of printing.

Home Position

Many procedures state the carriage transport assembly should be moved to home position. The carriage transport assembly is in home position when it is pulled all the way to the operator end of the slicer.

Models

HS6 Manual	HS6N* Manual
HS7 Automatic	HS7N* Automatic
HS8 Manual	HS8N* Manual
HS9 Automatic	HS9N* Automatic

*N models have a non-removable knife.

⚠ WARNING The slicer knife is very sharp. Exercise extreme caution when working near the knife.

Features

Listed are the finish, features and option differences between the models.

SLICER MODELS				
Features	HS6	HS7	HS8	HS9
Sharpening Housing Mount Finish	BB	BB	A	A
Slicer Base Finish	BB	BB	A	A
Tray Support Assembly Finish	BB	BB	A	A
Automatic Shut-Off	N/A	N/A	S	S
Cleaning Leg	S	S	S'	S'
S' = Lift Assist Cleaning Leg				
N/A = Not available.				
S = Standard on this model.				
A = Anodized finish.				
BB = Polished and ball burnished finish.				

- 10 rib Poly V-Belt driven knife.

- Carriage Home Switch - The knife motor will not start unless carriage unit is in home position. (HS7 home for auto only, HS8, HS9)
- Interlock Switch - When carriage is interlocked, knife motor will only run while the ON button is pressed. (HS8, HS9)
- Gauge Plate Closed To Stop Switch - Turns off knife motor when gauge plate is closed from open position. (HS8, HS9)
- Knife Reset Switch - Turns off knife motor if carriage tray is inactive for 30 seconds. (HS8, HS9)
- No voltage release - Requires the slicer to be manually re-started after a power interruption.

Electrical Components

SLICER MODELS				
Electrical Components	HS6	HS7	HS8	HS9
1MTR Knife Motor	X	X	X	X
Carriage Home Switch		X	X	X
Interlock Switch			X	X
Knife Reset Switch			X	X
Gauge Plate Closed To Stop Switch			X	X

SPECIFICATIONS

Electrical

100-120/60/1 (5 amps)

200-240/50/60/1 (2.5 amps) also available.

Motor

Knife ½ H.P.

Cord and Plug

A six foot flexible three wire cord and plug is standard equipment.

120V	NEMA 5-15P
230V	NEMA 6-15P

Thickness

Adjustable to slice a thickness up to 1-1/4".

Carriage Travel

12-1/2"

Stroke Count

Speed #1 Low	30
Speed #2 Medium Low	40
Speed #3 Medium High	50
Speed #4 High	60
*Numbers reflect full strokes per minute.	

Knife Speed

Knife speed - 430 RPM

Knife Dimension

13"(new) to 12-3/4"(min.)

Knife Sharpener

Top mounted removable two Borazon stone type.

Weight

Approximate shipping weight 135 lbs. , Net 103 lbs.

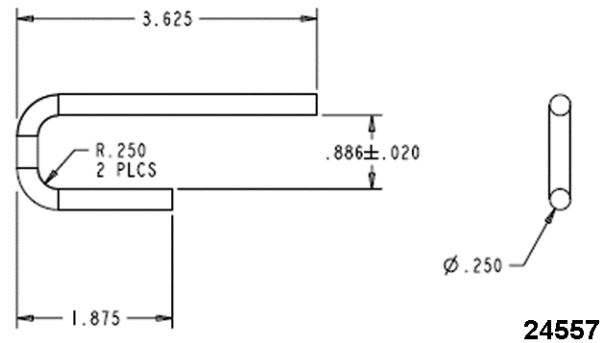
LUBRICATION

Lubricants	Where Used
Lubriplate FMO- 200-AW Part No. 437906	Carriage Transport Assembly- in wick for slide rod. Lightly coat- index seal.
Lubriplate SFL-000 NSF H-1	Lightly coat- meat grip slide rod.
Lubriplate SFL-1 NSF H-1	Lightly coat- meat grip shaft.
Chevron ALC-EPO	Coat- index mechanism shaft, index cam grooves, gauge plate boot.
Lubriplate FGL-0	Lightly coat- index shaft, knife shaft boot.

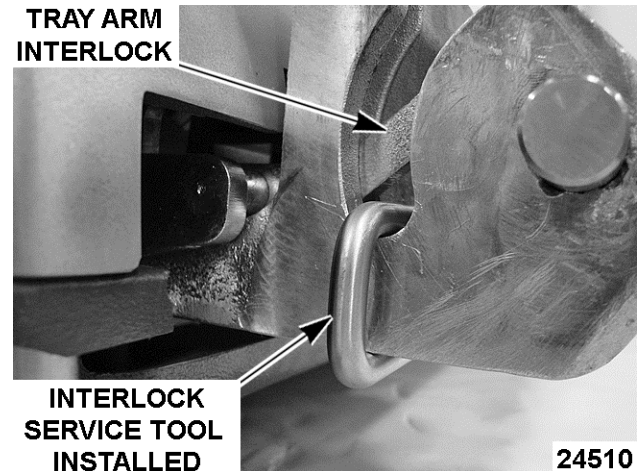
TOOLS

Required Tools

- Standard set of hand tools.
- VOM with A/C current tester (any quality VOM with a sensitivity of at least 20,000 ohms per volt can be used).
- Interlock Service Tool, Part No. 00-915522. Inserted into carriage transport assembly to allow movement during times when carriage tray unit is removed but carriage transport assembly needs to be moved for removal or adjustment of parts.

**Fig. 1****Interlock Service Tool Installation Instructions**

- Press down tray arm interlock and Insert interlock service tool as shown . Transport is now free to move without the tray.

**Fig. 2**

- The transport must be returned to home position in order to remove interlock service tool. Pull out tool.

Special Tools

- Wire Harness (Jumper Plug) Part No. 00-915276.
 - Loctite® Primer, obtain locally.
- NOTE:** Apply Loctite primer any time Loctite is used.
- Loctite® 603™, obtain locally.
 - Loctite® 222™, obtain locally.
 - Loctite® 242™, obtain locally.
 - Loctite® 271™, obtain locally.
 - Dow Corning® RTV 732™, obtain locally.
 - Never-Seez® Food Grade NSWT-14, Part No. 00-511907
 - Torque Wrench (20-400 in.-lbs)

- 10. Field Service Grounding Kit (available locally)
- 11. Knife Removal Tool, Part No. 00-914758
- 12. V-Belt Tension Tester, Part No. 00-874356.
Used to apply 10 lbs of force to top knife cover in
rulon screw adjustment.
- 13. Drive Belt Tension Gauge, Part No. 00-477756.

REMOVAL AND REPLACEMENT PARTS

SHARPENER



WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedures.

Sharpener - Removal

1. Lift up to remove sharpener from sharpener mount.



Fig. 3

Sharpener - Disassembly

NOTE: Remove only those parts required to access part(s) being replaced.

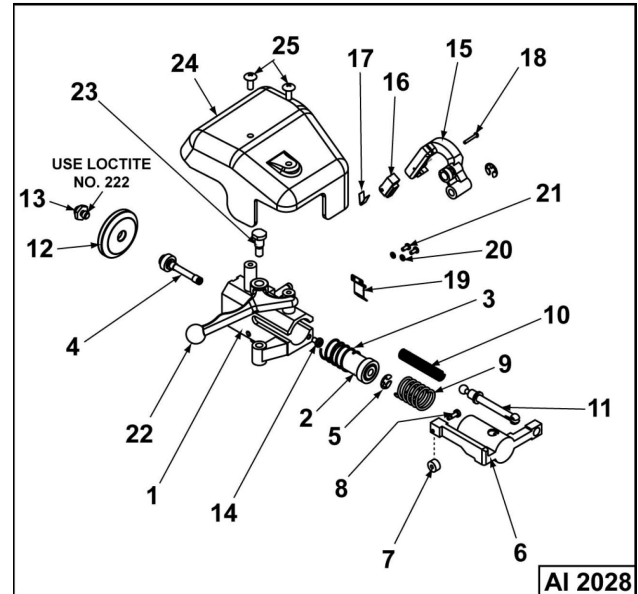


Fig. 4

NOTE: Refer to graphic #AI 2028 for disassembly.

1. Remove two screws (25) to remove cover assembly (24).
2. Remove screw (23) from housing assembly (1) to remove sharpener handle (22).
3. Squeeze together split end of push rod (11) and push it from actuator (6).
 - A. Remove push rod (11) by freeing rod ball from socket on truing arm (15).
 - B. Squeeze together split end of rod (11) and pull truing arm spring (10) from rod.
4. Remove screw (14) to remove actuator (6) and spring (9) from housing assembly (1).
5. Place a screw driver blade in end of grinding wheel shaft (4). Remove (R.H.) retaining screw (13) from shaft to remove grinding wheel (12) and allow plunger (2) and spring (3) to be removed from housing assembly (1).

NOTE: When reinstalling retaining screw (13) Loctite No. 222 must be used on threads.

6. Remove retaining ring (5) and pull grinding wheel shaft (4) from plunger (2).

NOTE: The sleeve bearings in plunger are not serviceable. Plunger and bearings must be replaced as an assembly (2).

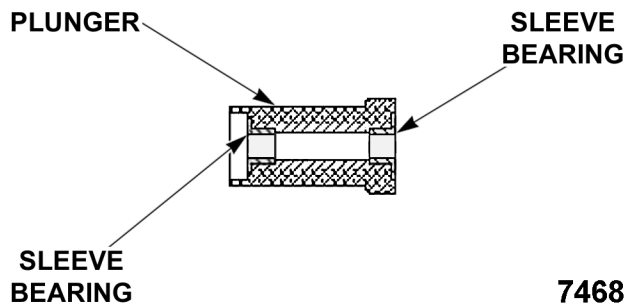


Fig. 5

7. Remove retaining ring (not numbered) to remove truing arm (15) from housing assembly (1).
 - A. Remove screw (18) from truing arm (15) to remove truing stone (16) and truing stone spring (17).

NOTE: When installing truing stone to truing arm and push rod assembly, spring and truing stone must be assembled together. Longest leg of spring should be against truing stone with bend in spring nearest truing stone screw. Truing stone screw must be installed so screw head will be toward housing assembly after final assembly.

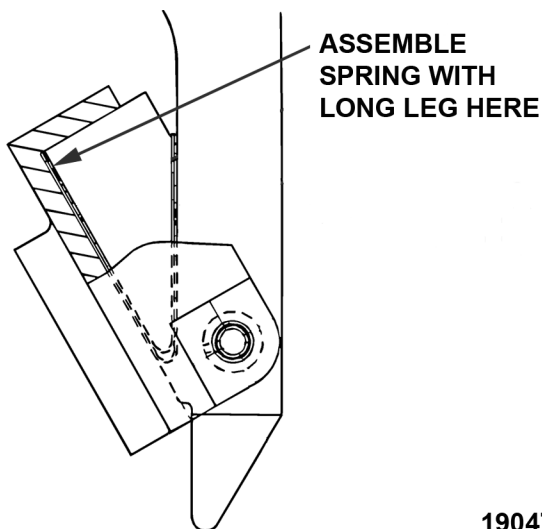


Fig. 6

8. Remove screw (8) to remove roller (7) from actuator (6).
9. Remove screws (21) to remove housing spring clip (19) from housing assembly (1).
10. Reassemble sharpener in reverse order.
11. Reinstall sharpener on slicer.
12. Check for proper knife sharpener operation.

TOP KNIFE COVER



WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedures.

WARNING The slicer knife is very sharp. Exercise extreme caution when working near the knife.

Top Knife Cover - Removal

1. Close gauge plate.
2. Move carriage transport assembly to home position.
3. Grasp cover knob and lift cover out and up from magnet and location pins.

Top Knife Cover - Replacement

1. Place cover on locating pins.
2. Place cover knob down onto magnet.

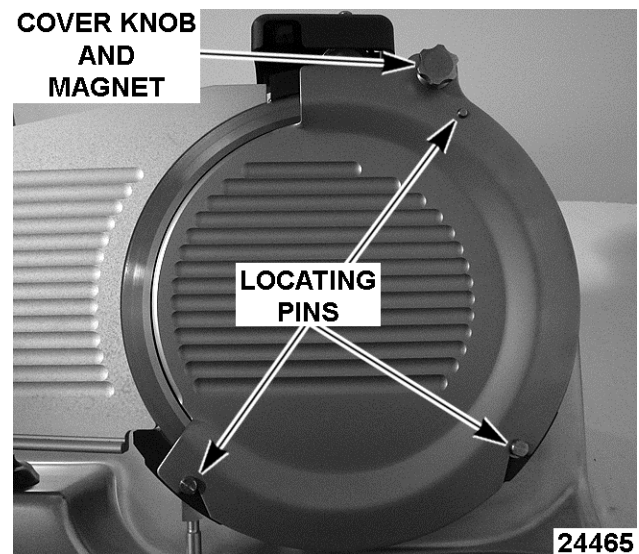


Fig. 7

NOTE: If top knife cover is being replaced with a new cover, perform TOP KNIFE COVER CHECK/ADJUSTMENT.

3. Check slicer for proper operation.

RING GUARD



WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedures.

Ring Guard - Removal

1. Remove TOP KNIFE COVER.
2. Remove ring guard cover.
3. Remove knife per KNIFE- REMOVABLE (NON N - MODEL SLICER) or KNIFE - NON REMOVABLE (N - MODEL SLICER).
4. Remove plug buttons and screws to free knife ring guard from sharpener housing mount.

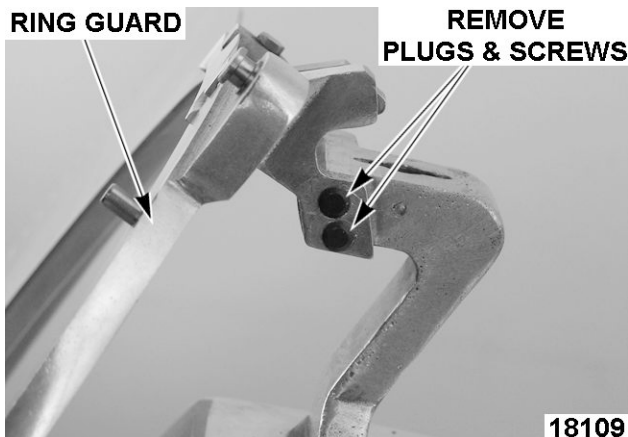


Fig. 8

5. Remove BOTTOM COVER.
6. Remove KNIFE MOTOR AND BRACKET ASSEMBLY.
7. Remove screws securing transport roller bar to slicer base.
8. Remove screws (2 places) securing ring guard to slicer base.



Fig. 9

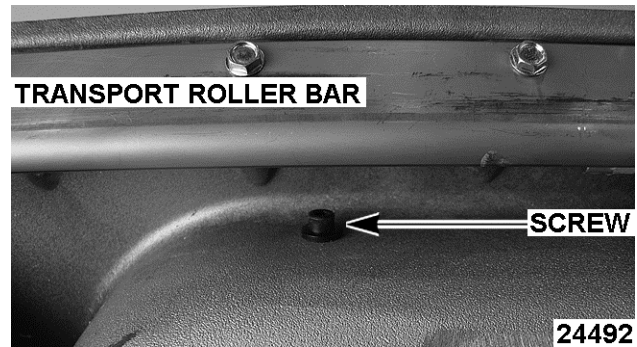


Fig. 10

Ring Guard - Replacement

1. Reverse removal procedure to install.
2. Apply Loctite 271 to ring guard post screw. Torque screw 20 in.-lbs.
3. Check and adjust height of ring guard to knife face RING GUARD ADJUSTMENT.
4. Check slicer for proper operation.

Knife Edge Protector Lock - Removal & Replacement

1. Lift off sharpener.
2. Remove TOP KNIFE COVER.
3. Remove ring guard cover.
4. Remove knife per KNIFE- REMOVABLE (NON N - MODEL SLICER) or KNIFE - NON REMOVABLE (N - MODEL SLICER).
5. Remove screw securing lock.

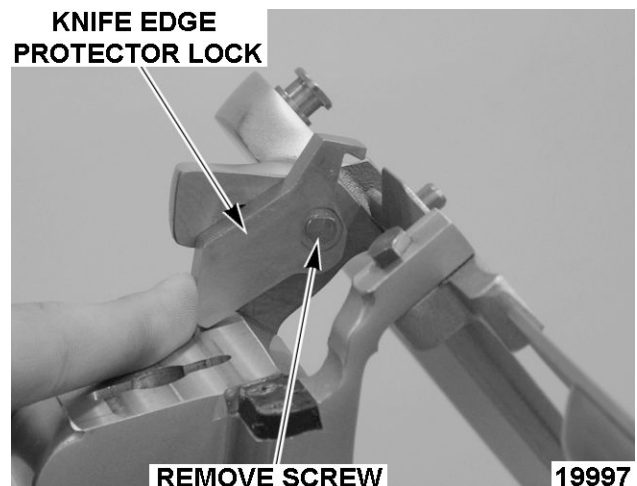


Fig. 11

6. Remove knife edge protector lock and torsion spring lock.
7. Reverse procedure to install.
8. Apply Loctite primer and Loctite 271 to threads of screw.



Fig. 12

NOTE: Knife edge protector lock is spring-loaded. Tighten screw until knife edge protector lock will not rotate freely, then back off until just free.

9. Check slicer for proper operation.

DEFLECTOR



WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedures.

1. Lift off sharpener.
2. Pull bottom of deflector from magnet. Rotate up and out from knife.
3. Remove deflector when pin in deflector mount lines up with slot in deflector.

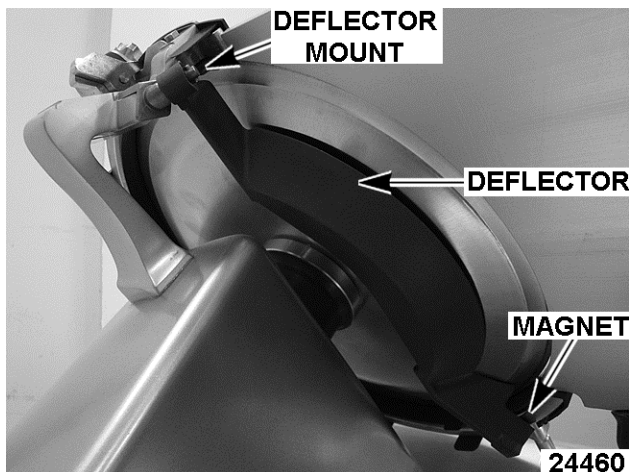


Fig. 13

4. Reverse procedure to install.
5. Check slicer for proper operation.

CARRIAGE TRAY AND MEAT GRIP ASSEMBLY



WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedures.

Carriage Tray Assembly - Removal

NOTE: Refer to diagram Carriage Tray and Meat Grip Assembly.

1. Move carriage transport assembly to home position.
2. Unscrew support tray knob.
3. Tilt carriage tray and tray support assembly away from slicer until it stops.
4. Grasp assembly with both hands and lift straight up.
5. Reverse procedure to install.

NOTE: When installing carriage tray assembly, verify that number stamped or etched into key plate of carriage tray matches the last three digits of the serial number on the slicer's data plate.

Carriage Tray - Disassembly

NOTE: Refer to diagram Carriage Tray and Meat Grip Assembly.

1. Remove Carriage Tray Assembly - Removal.
2. Remove two shoulder screws and washers to free carriage tray assembly from tray support arm.
3. Unscrew slide rod knob from mounting block.
4. Slide grip arm assembly from slide rod.
5. Slide rod from carriage tray assembly.
6. Remove screws securing support bracket & support block to tray.
7. Remove screws and washers securing thumb guard to carriage tray.

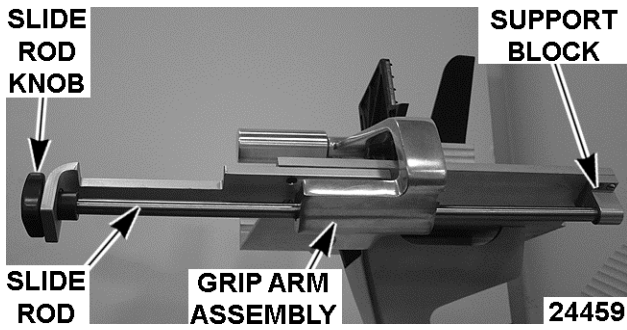


Fig. 14

8. Reverse disassembly procedure to install.
9. Apply Loctite 242 to threads of shoulder screws, mounting block and tighten slide rod.
10. Adjust CARRIAGE TRAY ASSEMBLY ADJUSTMENTS.
11. Torque shoulder screws to 80 in-lbs.
12. Check slicer for proper operation.

Meat Grip - Disassembly

NOTE: Refer to diagram Carriage Tray and Meat Grip Assembly.

1. Unscrew meat grip handle.
2. Remove washer and product feed grip.

NOTE: Meat grip arm bushings can be replaced.

3. Reverse the procedure to reassemble.

Carriage Tray Support Arm Assembly - Disassembly

NOTE: Refer to diagram Carriage Tray and Meat Grip Assembly.

NOTE: Threads of carriage tray support assembly knob are not to be lubricated.

1. Remove Carriage Tray Assembly - Removal.
2. Remove retaining ring to remove knob and washers from support arm.

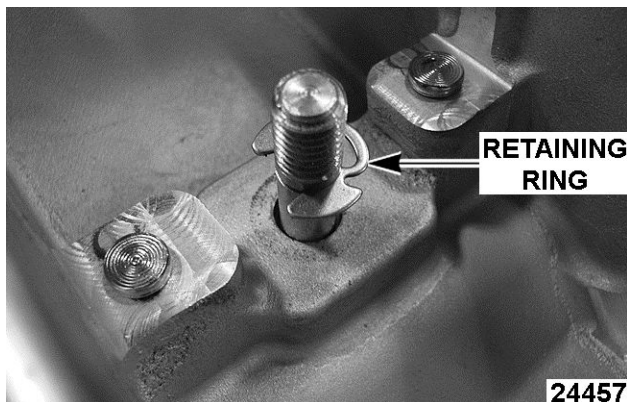


Fig. 15

3. Drive out roll pin from tray support arm.

4. Remove screws securing handle to carriage tray.

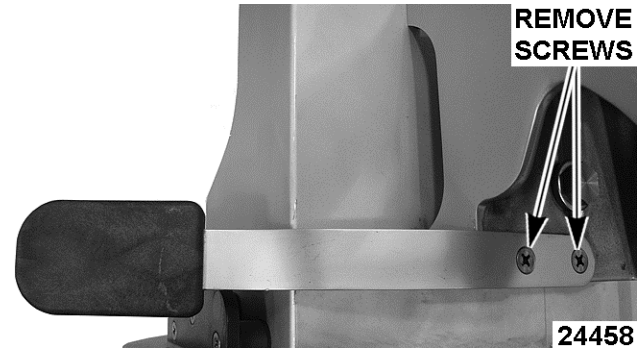


Fig. 16

5. Reverse removal procedure to install.
6. Apply RTV 732 to area arm contacts tray.

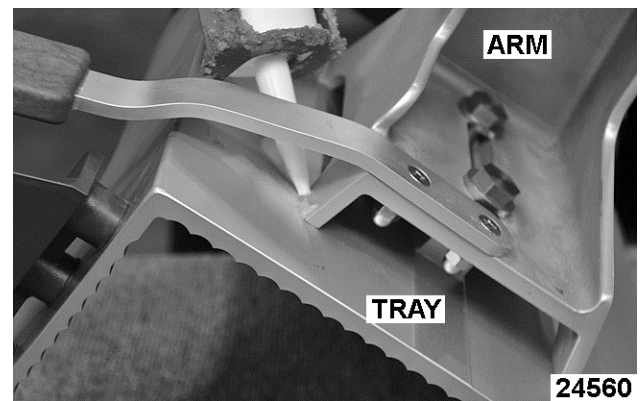


Fig. 17

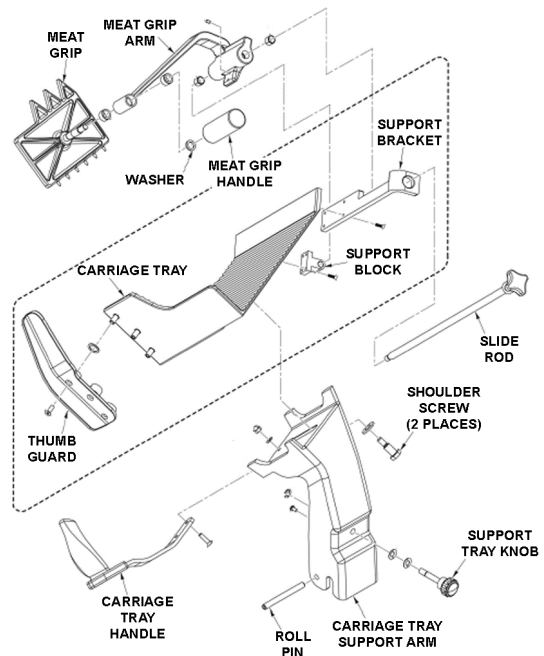


Fig. 18

24559

KNIFE- REMOVABLE (NON N - MODEL SLICER)



⚠ WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedures.

⚠ WARNING The slicer knife is very sharp. Exercise extreme caution when working near the knife.

Knife - Removal

NOTE: Replace knife if it is less than 12-3/4" diameter.

1. Remove CARRIAGE TRAY AND MEAT GRIP ASSEMBLY.
2. Remove TOP KNIFE COVER.
3. Remove ring guard cover.
4. Manually rotate knife until arrow is pointing at small pin.

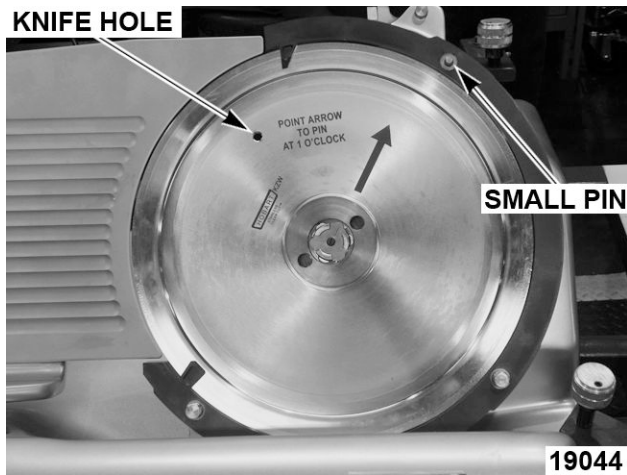


Fig. 19

5. Position knife removal tool with locator pin inserted into knife hole clearing three guide pins on ring guard.

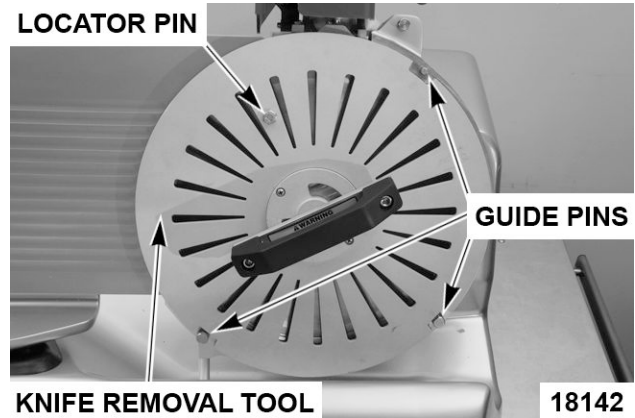


Fig. 20

6. Push knife removal tool inward until locking pins bottom onto knife hub. Then turn knife removal tool handle CCW until it stops.
 7. With knife removal tool engaged lift knife from machine.
 8. Reverse procedure to install.
- NOTE:** Make sure line on knife shaft is pointing toward small pin shown above in graphic 19044 before installing knife.
9. Check slicer for proper operation.

Knife - Replacement

1. Tape edge of knife.



Fig. 21

2. Remove knife per KNIFE- REMOVABLE (NON N - MODEL SLICER).
3. Place 7/8" socket on a flat stable surface.
4. Press knife and tool onto socket compressing three pins.

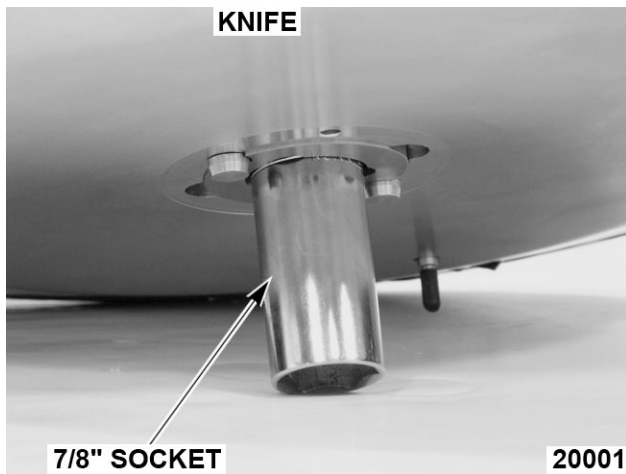


Fig. 22

5. Turn handle CW until it stops.

NOTE: Knife will drop over socket onto table.

NOTE: Carefully dispose of knife in replacement knife box.

6. Tape edge of replacement knife.
7. Orient clamp plate as shown.

NOTE: Reuse clamp plate.



Fig. 23

8. Place knife onto knife removal tool.
9. Compress three pins with 7/8" socket.



Fig. 24

10. Turn handle CCW until it stops.
11. Reverse removal procedure as outlined under KNIFE (NON – MODELS) to install.
12. Check slicer for proper operation.

Knife Replacement (Knife Removal Tool Unavailable)

1. Remove carriage tray assembly as outlined under CARRIAGE TRAY AND MEAT GRIP ASSEMBLY.
2. Remove top knife cover as outlined under TOP KNIFE COVER.
3. Remove ring guard cover.
4. Use interlock service tool to disengage interlocks so that gauge plate can be opened. Open gauge plate.
5. Tape knife edge.



Fig. 25

6. Rotate knife removal clamp plate CCW by tapping with a brass punch and hammer.

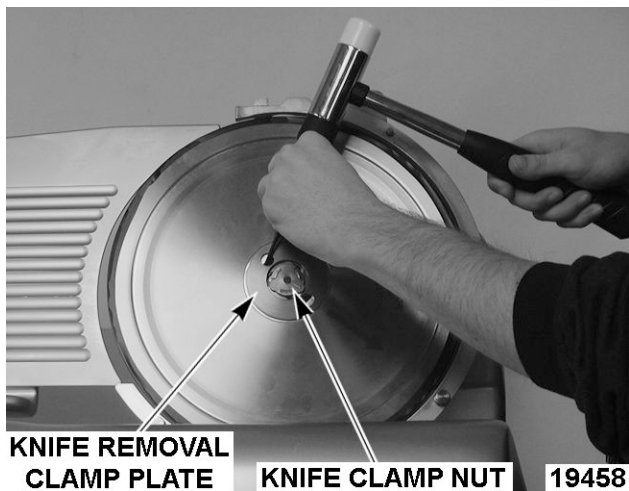


Fig. 26

7. When knife removal clamp plate lines up with knife clamp nut, remove knife.
8. Align clamp nut line to top cover pin.

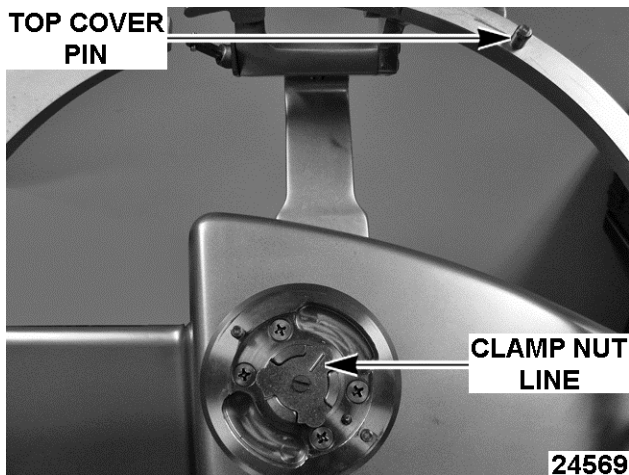


Fig. 27

9. Install knife onto locating pins so that arrow also points to top cover pin.

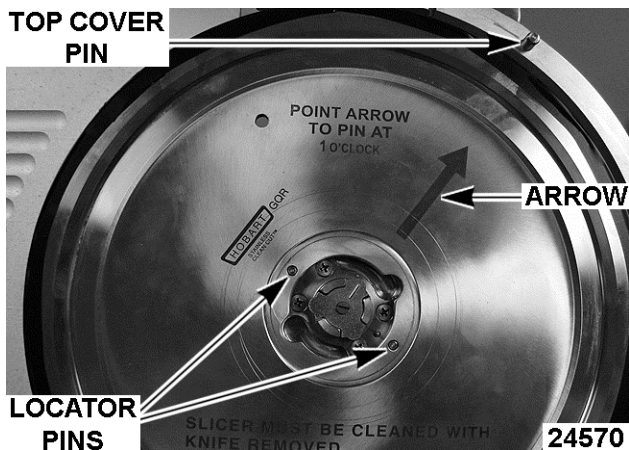


Fig. 28

10. Install clamp plate with large holes as shown



Fig. 29

11. Rotate clamp plate CW with brass punch until large holes line up with cutout in knife.



Fig. 30

NOTE: When knife is replaced.

- A. Check clearance between knife and gauge plate as outlined under GAUGE PLATE ADJUSTMENT.
- B. Check fit of top knife cover.
- C. Check that outside diameter of knife does not rub inside diameter of ring guard cover or gauge plate. Refer to GAUGE PLATE ADJUSTMENT or RING GUARD ADJUSTMENT.
- D. Sharpen knife as outlined under SHARPENING.

12. Check slicer for proper operation.

KNIFE - NON REMOVABLE (N - MODEL SLICER)



⚠ WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedures.

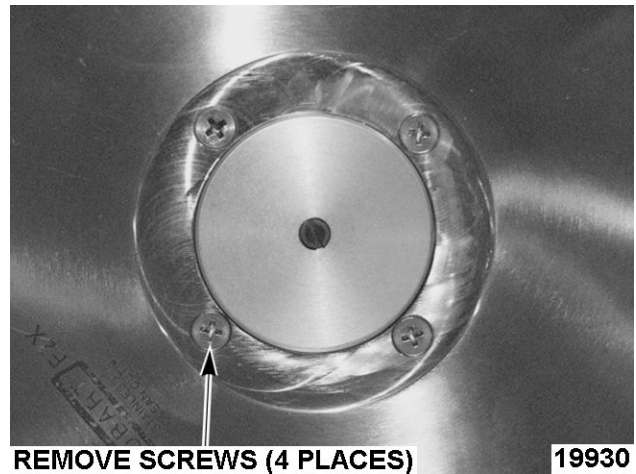
⚠ WARNING The slicer knife is very sharp. Exercise extreme caution when working near the knife.

1. Remove CARRIAGE TRAY AND MEAT GRIP ASSEMBLY.
2. Remove TOP KNIFE COVER.
3. Remove ring guard cover.
4. Use interlock service tool to turn interlocks off so that gauge plate can be opened. Open gauge plate.
5. Tape knife edge.



Fig. 31

6. Remove four screws.



REMOVE SCREWS (4 PLACES)

19930

Fig. 32

7. Remove knife.
8. Reverse procedure to install.
9. Apply Loctite 242 to screw threads and torque screws to 45 in-lbs.

NOTE: When knife is replaced.

- A. Check clearance between knife and gauge plate as outlined under GAUGE PLATE ADJUSTMENT.
- B. Check fit of top knife cover.
- C. Check that outside diameter of knife does not rub inside diameter of ring guard cover or gauge plate. Refer to GAUGE PLATE ADJUSTMENT or RING GUARD ADJUSTMENT.
- D. Sharpen knife as outlined under SHARPENING.

10. Check slicer for proper operation.

GAUGE PLATE ASSEMBLY



⚠ WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedures.

1. Remove knife per KNIFE- REMOVABLE (NON N - MODEL SLICER) or KNIFE - NON REMOVABLE (N - MODEL SLICER).
2. Pull down gauge plate bottom boot from gauge plate support.
3. Remove gauge plate bolts & washers.

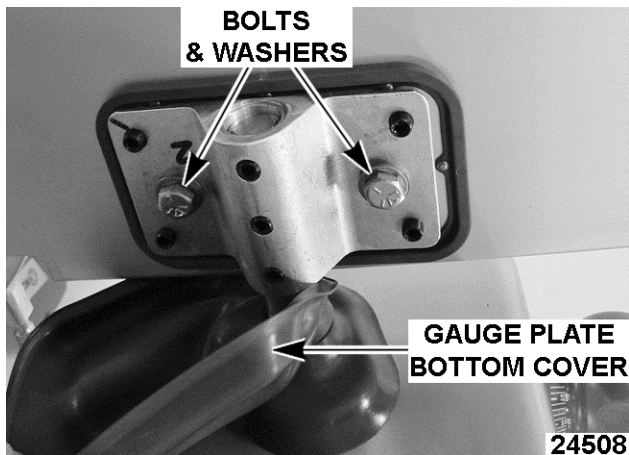


Fig. 33

4. Remove gauge plate.
5. Reverse procedure to install.
6. Perform GAUGE PLATE ADJUSTMENT.
7. Check slicer for proper operation.

LIFT ASSIST LEVER (HS7 & HS9)



WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedures.

1. Perform Sharpener - Removal.
2. Perform Carriage Tray Assembly - Removal.
3. Place slicer on its side, so it is resting on motor housing.
4. Remove screw from lifter arm (opposite side of handle) and slide off arm and bushing.
5. Remove screw securing lever to slicer.
6. Slide lever with bushings out from slicer (handle side of lever).

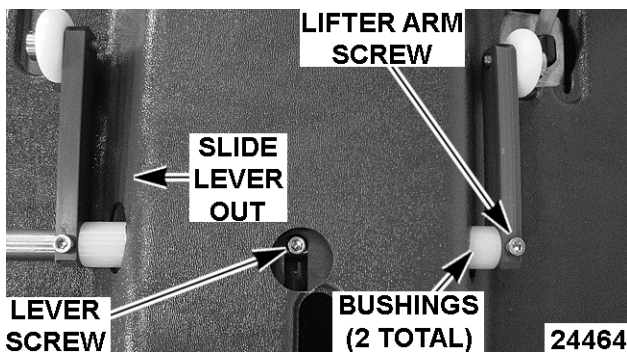


Fig. 34

7. Remove bottom cover.

8. Remove four screws securing lifter bearing block to auto drive assembly.

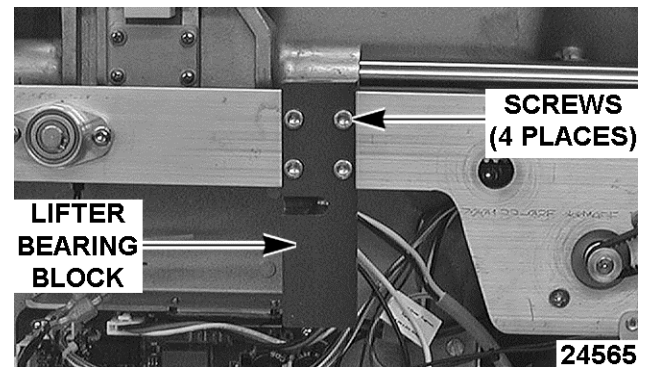


Fig. 35

9. Reverse procedure to install.
10. Apply loctite 242 to all screws.

NOTE: Ensure both bushings are installed against lifter arms.

LIFT LEG ASSEMBLY (HS6 & HS8)



WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedures.

1. Perform Sharpener - Removal.
2. Perform Carriage Tray Assembly - Removal.
3. Place slicer on its side, so it is resting on motor housing.
4. Remove two screws securing lift leg block to slicer base.

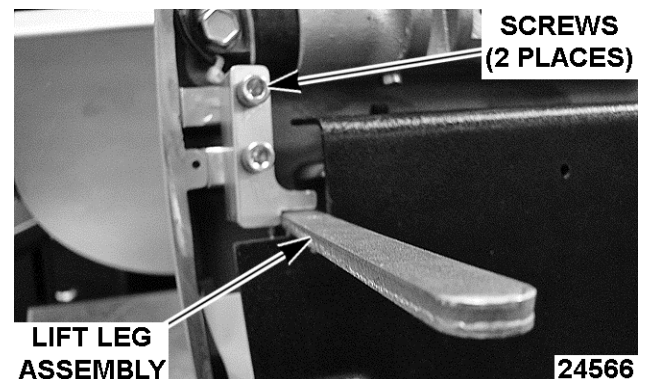


Fig. 36

5. Remove screw securing leg and spring to block assembly.
6. Reverse the procedure to install.

BOTTOM COVER



⚠ WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedures.

1. Perform Sharpener - Removal.
2. Remove Carriage Tray Assembly - Removal
3. Place slicer on its side, so it is resting on motor housing.
4. HS7 & HS9 Only. remove Auto / Manual knob by loosening set screw and sliding knob from shaft.

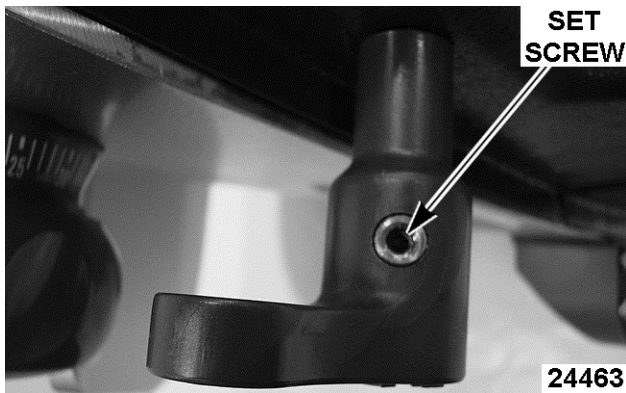


Fig. 37

5. Remove LIFT ASSIST LEVER (HS7 & HS9).
6. Remove 4 screws and unscrew 4 foot stands.

NOTE: Only screws and 2 foot stands need removed on HS6 & HS8 bottom cover.

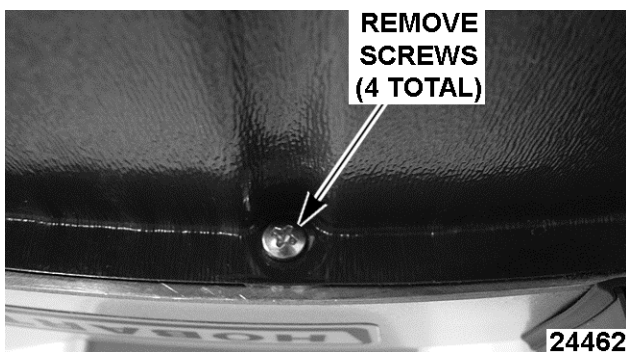


Fig. 38

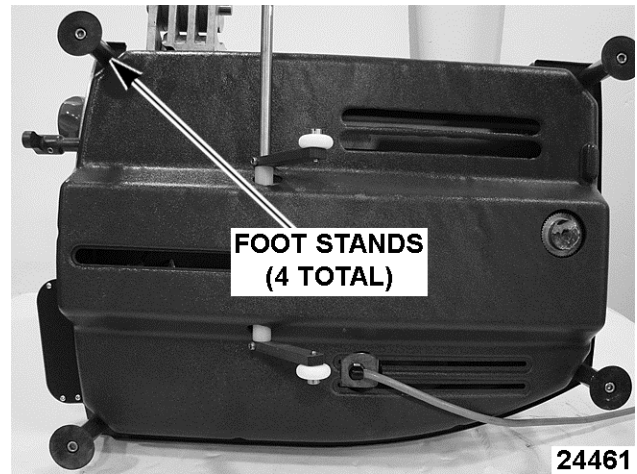


Fig. 39

7. Remove bottom cover and pull power cord thru cover.
8. Reverse procedure to install.
9. Check slicer for proper operation.

AUTO / MANUAL ROD ASSEMBLY (HS7 & HS9)



⚠ WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedures.

Auto / Manual Rod - Removal

1. Perform Sharpener - Removal.
2. Perform Carriage Tray Assembly - Removal.
3. Remove BOTTOM COVER.
4. Remove four screws securing auto / manual selector rod mounting block & switch bracket to slicer base.

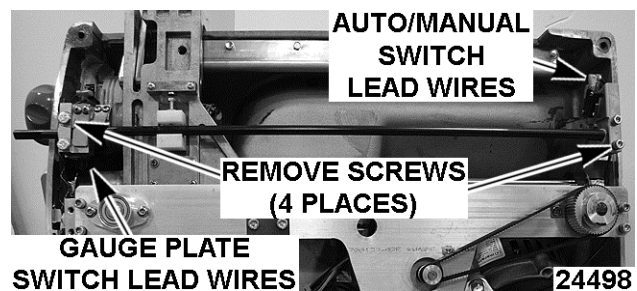


Fig. 40

5. While holding end of rod (selector knob end) pull opposite end away from base to remove auto / manual selector rod.

NOTE: Take note of close to stop actuator and index cam position for installation. Gauge plate in the closed position, actuator will be close to switch housing. Gauge plate in open position, actuator will be away from switch housing.

NOTE: Hold index cam close to stop actuator in place with finger to prevent pin from propelling away.

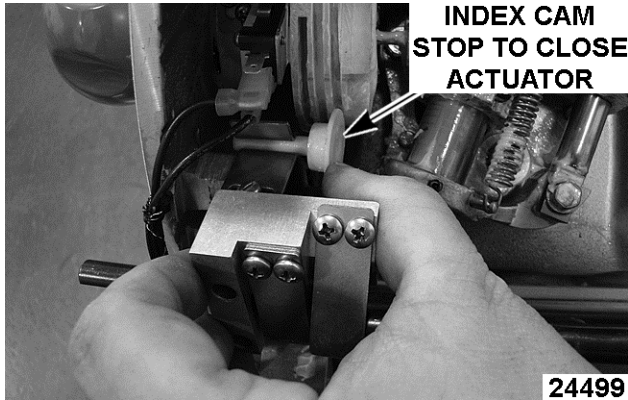


Fig. 41

6. Note location of lead wires to auto / manual switch & gauge plate switch, and disconnect.

NOTE: N.O. & COM terminals used.

7. Reverse removal procedure to install.
8. Perform GAUGE PLATE CLOSED TO STOP SWITCH 2S ADJUSTMENT (HS8 & HS9).
9. Perform AUTO / MANUAL SWITCH 5S ADJUSTMENT (HS7 & HS9)

Auto / Manual Rod - Disassembly

1. Remove two short and one long screws securing bracket to mounting block.
2. Reverse procedure to install.
3. Verify both mounting bracket screws at middle location of slotted holes.

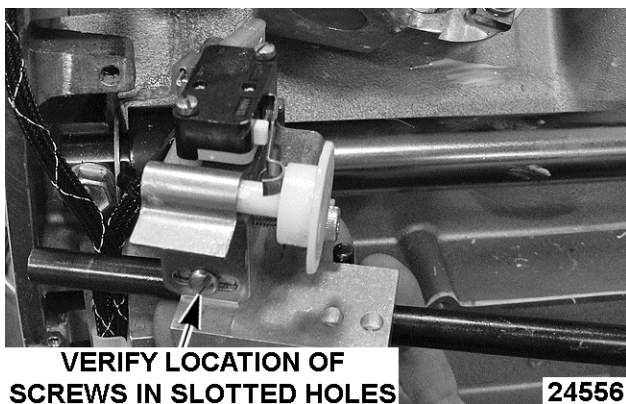


Fig. 42

4. Install auto drive mounting block & switch bracket with rod hole position further from the slicer base.

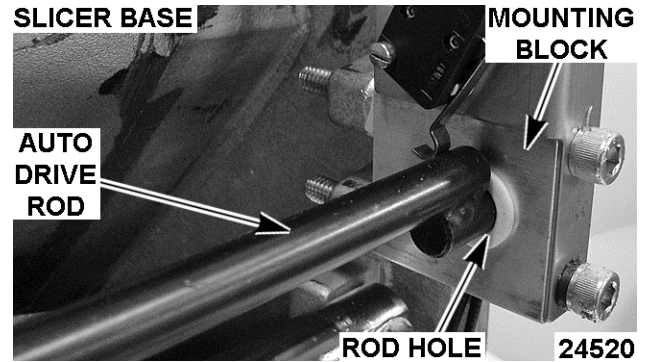


Fig. 43

5. Check slicer for proper operation.
6. Perform GAUGE PLATE CLOSED TO STOP SWITCH 2S ADJUSTMENT (HS8 & HS9).
7. Perform AUTO / MANUAL BELT GRIP ADJUSTMENT (HS7 & HS9).

AUTO DRIVE MECHANISM (HS7 & HS9)



WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedures.

Auto Drive Mechanism - Removal

NOTE: Refer to diagram Auto Drive Assembly.

1. Perform Sharpener - Removal.
2. Perform Carriage Tray Assembly - Removal.
3. Remove BOTTOM COVER.
4. Remove screw securing lead wires restraining clip to auto drive assembly.
5. Remove screws securing auto drive assembly.

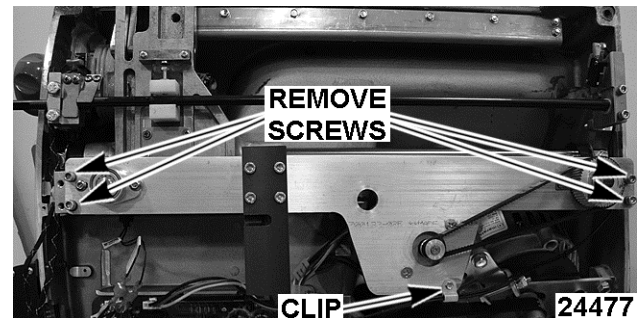


Fig. 44

6. Carefully lay auto drive assembly down on table surface.
7. Remove screws securing lead wire retaining clips from auto drive assembly & slicer base.

8. Disconnect lead wire connectors.

Auto Drive Mechanism - Disassembly

NOTE: Refer to diagram Auto Drive Assembly.

NOTE: Remove only those parts required to access part(s) being replaced.

1. Remove screws securing auto drive motor.

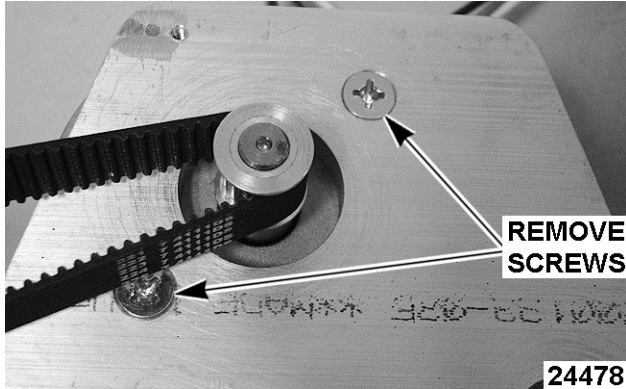


Fig. 45

2. Remove auto drive motor and secondary belt.
3. Remove set screws securing transmission pulley.

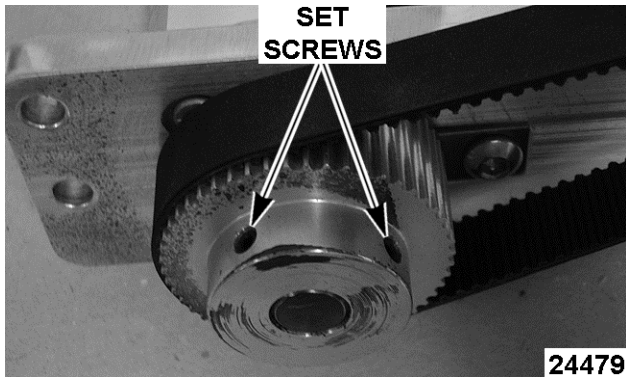


Fig. 46

4. Remove screws, washers & plate securing auto drive transmission housing.

NOTE: Transmission housing on opposite side.

5. Loosen tensioner assembly screws.
6. Remove auto drive transmission housing primary belt, and transmission.
7. Remove screws and washers securing tensioner assembly.

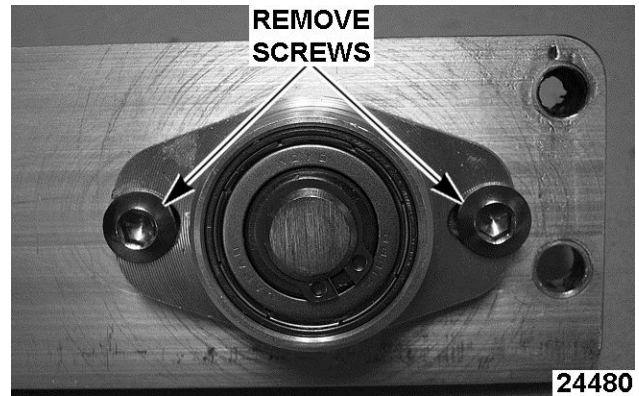


Fig. 47

8. Remove tensioner assembly.
9. Reverse procedure to assemble.
 - A. Apply Loctite 271 to transmission pulley set screws and support plate / bracket screws.
 - B. Apply Loctite 242 to all other screws removed.
 - C. Set belt tension by applying hand pressure to tensioner assembly.
10. Check slicer for proper operation.

Auto Drive Mechanism - Replacement

NOTE: Refer to diagram Auto Drive Assembly.

1. Reverse removal procedure to install.
2. Place primary auto drive belt in clip assembly.

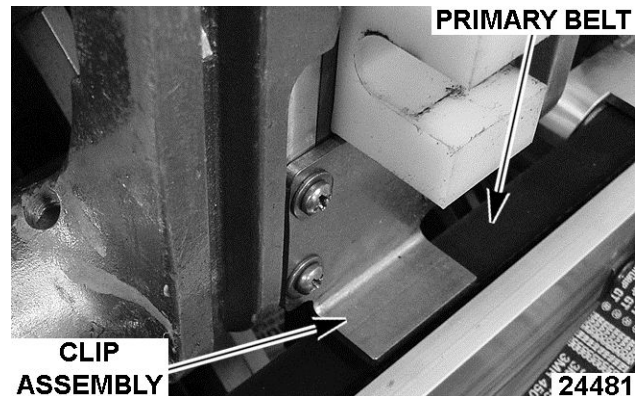


Fig. 48

3. Install lead wire retaining clips to auto drive assembly.

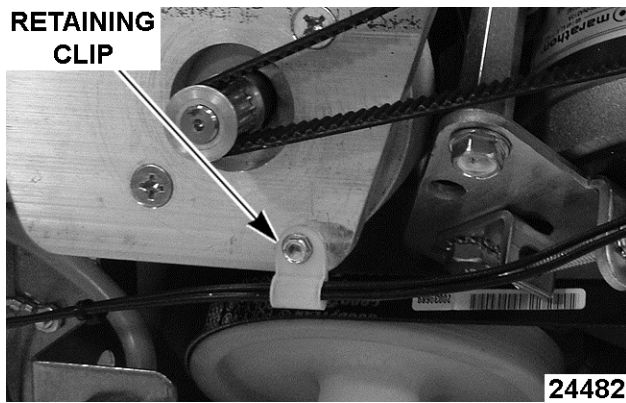


Fig. 49

4. Perform AUTO / MANUAL BELT GRIP ADJUSTMENT (HS7 & HS9).
5. Check slicer for proper operation.

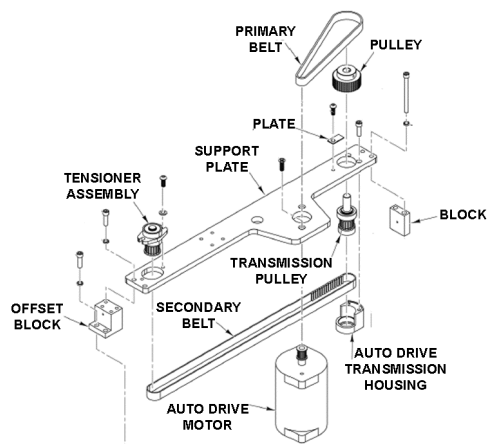


Fig. 50

ROLLER BEARING



⚠ WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedures.

1. Perform Sharpener - Removal.
2. Perform Carriage Tray Assembly - Removal.
3. Remove BOTTOM COVER.
4. (HS7 & HS9) Remove Auto / Manual Rod - Removal.
5. Remove 8 screws securing transport roller bar to slicer base. Slide bar out from roller bearing.
6. Remove retaining ring and pull roller bearing assembly from adjusting screw.

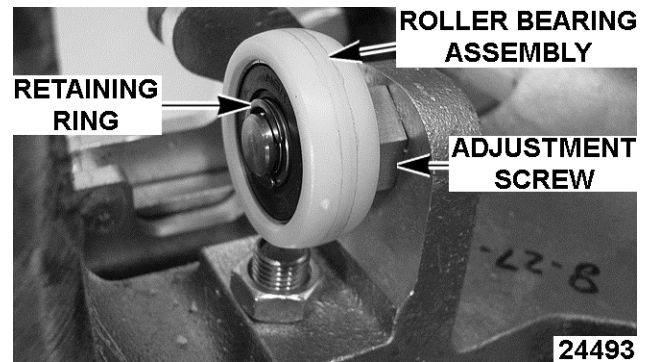


Fig. 51

7. Perform ROLLER BEARING ADJUSTMENT.
8. Reverse removal procedure to install.
9. Perform OVERTURN SCREW ADJUSTMENT.
10. Check slicer for proper operation.

TRANSPORT & SLIDE ROD



⚠ WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedures.

Removal

1. Perform Sharpener - Removal.
2. Perform Carriage Tray Assembly - Removal.
3. Remove BOTTOM COVER.

NOTE: (HS7 & HS9 models) The transport service tool must be used to move transport away from home position.

4. Remove AUTO / MANUAL ROD ASSEMBLY (HS7 & HS9).
5. Move carriage transport assembly to middle of slide rod.
6. Remove 8 screws securing transport roller bar to slicer base. Slide bar out from roller bearing.
7. Remove two bolts to free slide rod from slicer base

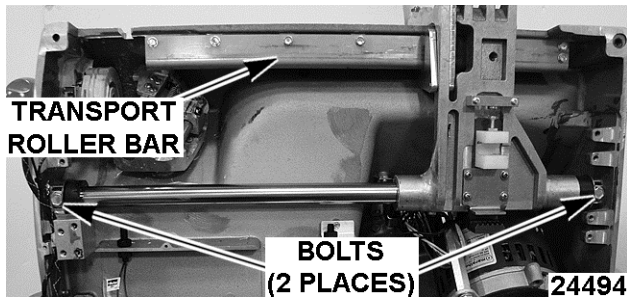


Fig. 52

8. Lift slide rod and carriage transport assembly from slicer base.
9. Remove washers and bumpers from the slide rod.
10. Remove slide rod from carriage transport assembly.
11. Reverse procedure to install.

NOTE: Ensure auto drive belt installed between auto drive belt clip & auto drive belt bracket.

12. Perform AUTO / MANUAL BELT GRIP ADJUSTMENT (HS7 & HS9).
13. Verify CARRIAGE TRAY ASSEMBLY ADJUSTMENTS.
14. Verify OVERTURN SCREW ADJUSTMENT.
15. Check slicer for proper operation.

Transport - Disassembly

1. Remove wick from transport assembly.

NOTE: Transport bearings can be replaced and or included with transport assembly.

2. Remove retaining ring & roller bearing.
3. Remove screw securing adjustment screw to transport.

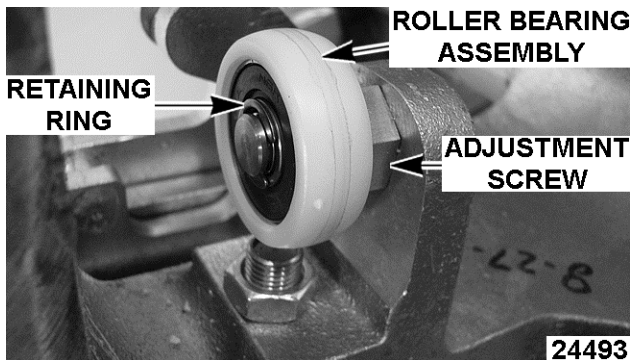


Fig. 53

4. Remove the jam nut and over turn set screw.
5. Remove jam nuts and set screws from transport.

6. Remove two screws and magnet block (HS7 & HS9).
7. Remove four screws and washers to remove belt grip bracket and the auto drive clutch clip (HS7 & HS9).
8. Remove retaining clip and interlock extension spring.
9. Punch out pin from transport securing tray interlock assembly (HS8 & HS9).

NOTE: Transport at this point is available as a service part.

10. Reverse disassembly procedure to assemble.
11. Apply Lubriplate FMO- 200-AW to slide rod and wick.
12. Perform ROLLER BEARING ADJUSTMENT.
13. Perform OVERTURN SCREW ADJUSTMENT.
14. Perform AUTO / MANUAL BELT GRIP ADJUSTMENT (HS7 & HS9).
15. Perform CARRIAGE TRAY ASSEMBLY ADJUSTMENTS.
16. Check for proper operation.

KNIFE MOTOR AND BRACKET ASSEMBLY



WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedures.

Knife Motor and Bracket - Removal

1. Perform Sharpener - Removal.
2. Perform Carriage Tray Assembly - Removal.
3. Remove BOTTOM COVER.
4. Remove AUTO DRIVE MECHANISM (HS7 & HS9).
5. Note the color and location of motor lead wires and disconnect them.
6. Remove POLY-V BELT.
7. Remove three bolts holding motor plate/motor and gasket assembly to slicer base.
8. Tilt assembly and remove motor & bracket assembly from slicer base.
9. Note location of pulley on motor shaft.

10. Loosen two set screws and remove belt pulley from shaft.
11. Note location and type of washers with screws and relationship of motor plate to motor leads.
12. Remove screws and gasket to free motor plate from motor.

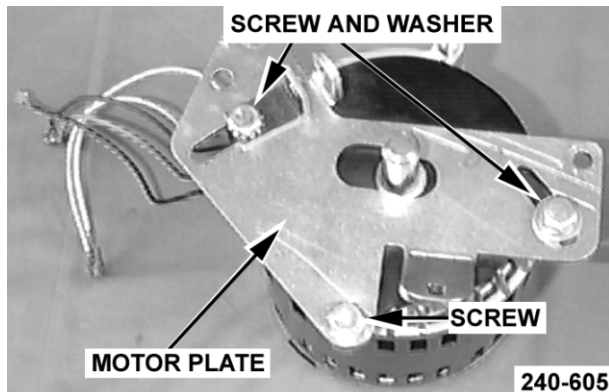


Fig. 54

Knife Motor and Bracket - Replacement

NOTE: It is recommended that the motor gasket be replaced anytime the motor is replaced. When installing a new motor gasket, remove backing from gasket before installation.

1. Reverse removal procedure to assemble and perform POLY- V BELT ADJUSTMENT AND PULLEY ALIGNMENT.
2. Install auto drive assembly.
3. Install bottom cover.
4. Check for proper operation.

CAPACITOR



WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedures.

Capacitor - Removal

1. Perform Sharpener - Removal.
2. Perform Carriage Tray Assembly - Removal.
3. Remove BOTTOM COVER.
4. If necessary, remove AUTO DRIVE MECHANISM (HS7 & HS9).
5. With the blade of a screw driver pry end of capacitor bracket to free capacitor.

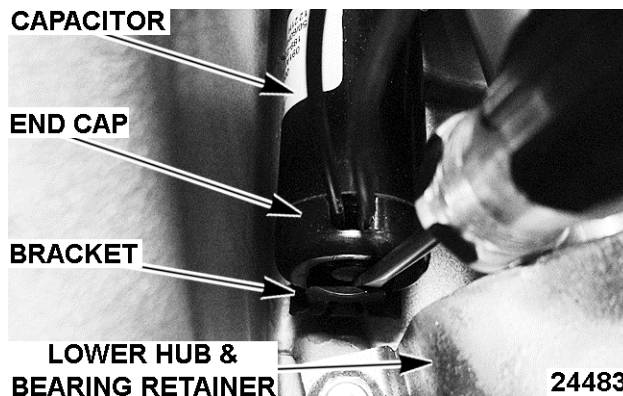


Fig. 55

6. Lift capacitor and end cap from bracket.
7. Remove end cap and disconnect lead wires.

Capacitor - Replacement

1. Reverse removal procedure.
2. Verify capacitor is secured into position within the bracket.
3. Check slicer for proper operation.

ELECTRONIC START SWITCH



WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedures.

1. Perform Sharpener - Removal.
2. Perform Carriage Tray Assembly - Removal.
3. Remove BOTTOM COVER.
4. Remove AUTO DRIVE MECHANISM (HS7 & HS9).
5. Remove two screws holding start switch bracket to slicer base.

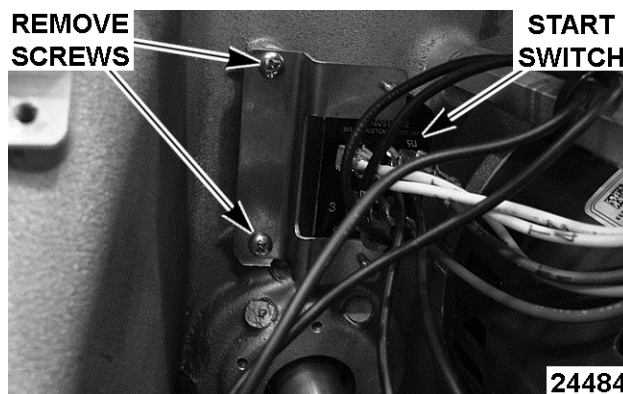


Fig. 56

6. Note location and disconnect start switch lead wires.
7. Remove two screws from start switch bracket to free start switch.
8. Reverse the procedure to install.
9. Check slicer for proper operation.

KNIFE SHAFT



WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedures.

Knife Shaft - Removal

NOTE: Refer to diagram Knife Shaft Assembly.

1. Remove TOP KNIFE COVER.
2. Remove ring guard cover.
3. Remove knife per KNIFE- REMOVABLE (NON N - MODEL SLICER) or KNIFE - NON REMOVABLE (N - MODEL SLICER).
4. Remove BOTTOM COVER.
5. Remove AUTO DRIVE MECHANISM (HS7 & HS9)
6. Remove KNIFE MOTOR AND BRACKET ASSEMBLY.
7. Remove nut and washer from knife shaft.

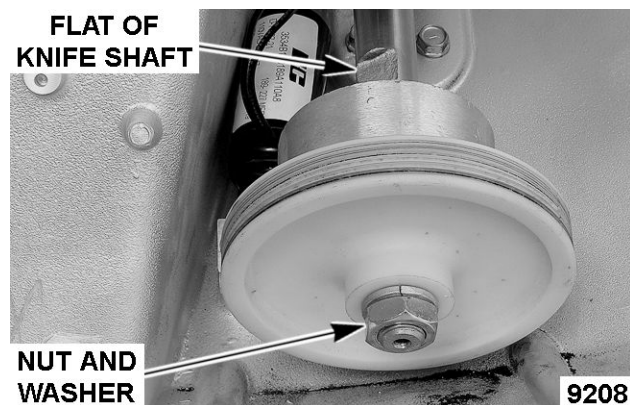


Fig. 57

NOTE: Care must be taken not to damage the outside diameter of the pulley. A wooden block can be used to aid in tapping out shaft.

8. Protect threads of knife shaft.
 - A. Tap upward on knife shaft until pulley can be removed.
 - 1) Remove pulley.

- B. Continue tapping upward on knife shaft until shaft is clear of lower hub and bearing retainer.
9. Remove knife shaft assembly from slicer base and deflector mount.
 - A. Remove retaining ring from shaft.
 - B. Press upper bearing from knife shaft.
10. Remove screws securing lower hub and bearing retainer to slicer base.

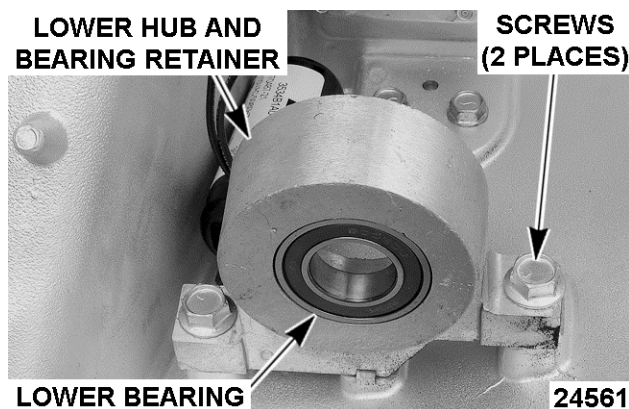


Fig. 58

- A. Press bearing from lower hub and bearing retainer.

NOTE: Replacement shaft and lower bearing hub come with bearings installed.

- B. Remove six screws securing boot to slicer base.

Knife Shaft - Replacement

CAUTION Excessive Loctite can damage the bearings.

NOTE: Refer to diagram Knife Shaft Assembly.

1. Apply Loctite primer and Loctite #638 between the shaft and both bearings so they rotate as a unit after assembly.
2. Install knife shaft boot and ring.
 - A. Apply Loctite 242 to threads of six screws.

NOTE: Do Not over tighten screws. Over tightening screws will deform & separate boot from upper housing.

3. Press top bearing on shaft and install the retaining ring.

NOTE: Replacement shaft comes with bearing installed.

4. Press lower bearing into lower bearing hub.
5. Loosely install lower bearing hub and bearing retainer to slicer base.

NOTE: Replacement lower bearing hub comes with bearing installed.

6. Install knife shaft through knife shaft boot and slicer base. Then route knife shaft through lower hub and bearing retainer.
7. Reinstall pulley onto knife shaft with counterbored hub toward lower hub and bearing retainer.

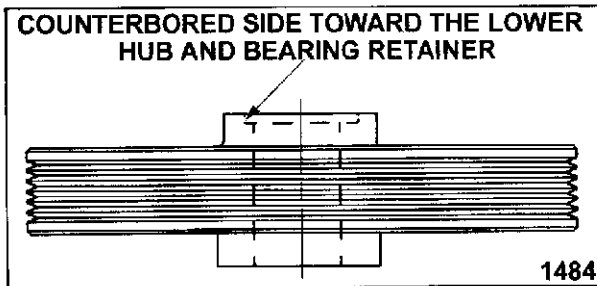


Fig. 59

8. Seat knife shaft & bearings.
 - A. Carefully tap knife shaft pressing upper bearing into slicer base until bearing is seated.
 - B. Push knife shaft down thru lower bearing hub.
9. Tap down on shaft to ensure upper bearing is seated and retaining ring is making contact with inner race of lower bearing.
10. Tighten hardware securing lower hub and bearing retainer to base.
11. Reinstall lock washer and jam nut. Tighten against pulley.
12. Check height of knife ring guard to knife face RING GUARD.
13. Install KNIFE MOTOR AND BRACKET ASSEMBLY, adjust pulley and poly-V belt tension POLY- V BELT ADJUSTMENT AND PULLEY ALIGNMENT.
14. Install ring guard cover.
15. Install top knife cover.
16. Check slicer for proper operation.

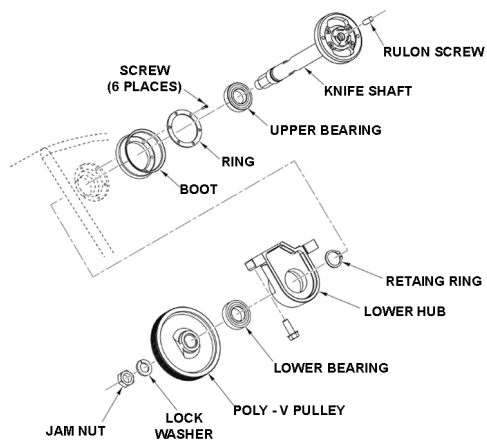


Fig. 60

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SHARPENER HOUSING MOUNT



WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedures.

Sharpener Housing Mount - Removal

1. Remove TOP KNIFE COVER.
2. Remove ring guard cover.
3. Remove knife per KNIFE - REMOVABLE (NON N - MODEL SLICER) or KNIFE - NON REMOVABLE (N - MODEL SLICER).
4. Remove plug buttons and screws securing housing mount to knife ring guard.

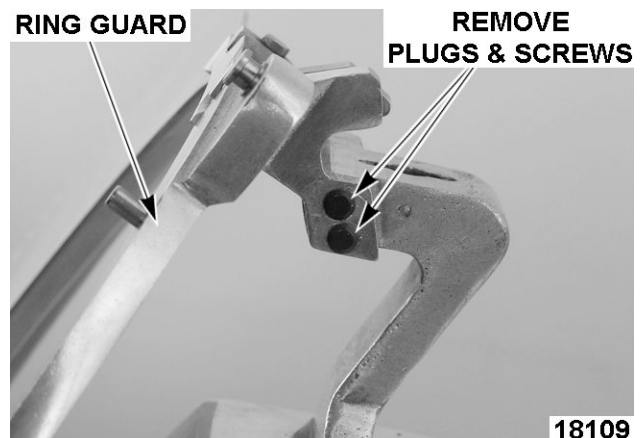


Fig. 61

5. Remove KNIFE MOTOR AND BRACKET ASSEMBLY.
6. Remove two bolts holding housing mount to base.

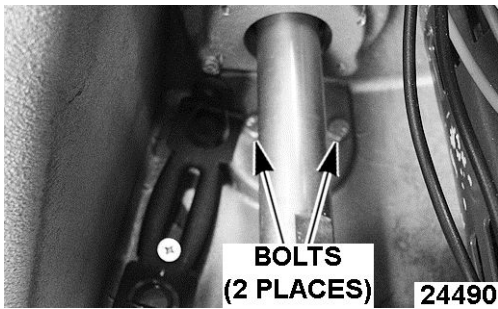


Fig. 62

7. Pull housing mount from slicer base.

Knife Edge Protector

1. Lift off sharpener.
2. Remove TOP KNIFE COVER.
3. Remove ring guard cover.
4. Remove knife per KNIFE- REMOVABLE (NON N - MODEL SLICER) or KNIFE - NON REMOVABLE (N - MODEL SLICER).
5. Remove screw.

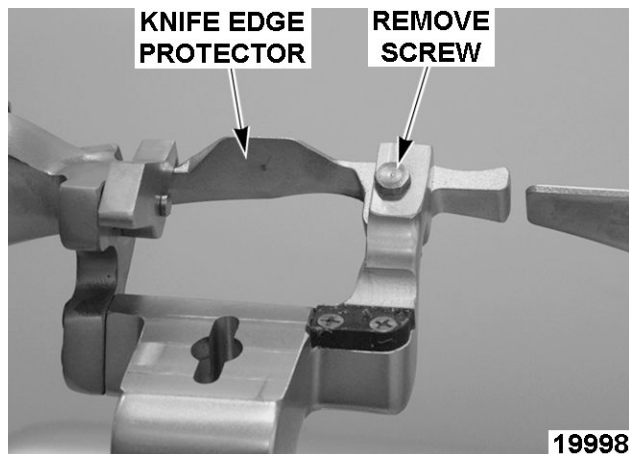


Fig. 63

6. Remove knife edge protector and knife protector spring.
7. Reverse procedure to install.
8. Apply Loctite primer and Loctite 271 to threads of screw.

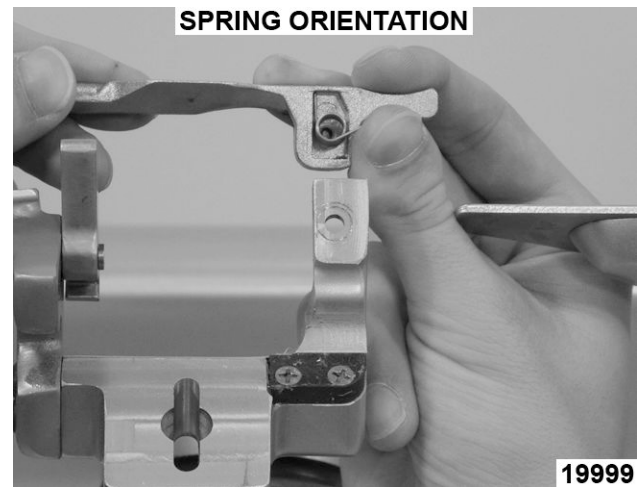


Fig. 64

NOTE: Knife edge protector is spring-loaded. Tighten screw until knife edge protector will not rotate freely, then back off until just free.

9. Check slicer for proper operation.

Sharpener Housing Mount - Installation

1. Reverse removal procedure to install.
2. Apply loctite 271 to threads and torque screws holding housing mount to base 25 in.-lbs.
3. Apply loctite 242 to threads and torque screws securing housing mount to knife ring guard 10 in.-lbs.
4. Seal housing mount to slicer base with RTV 732.

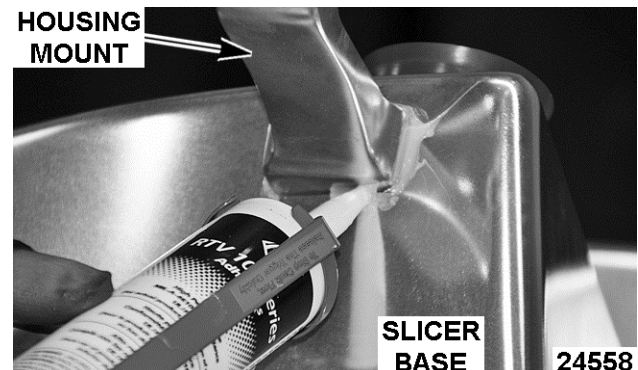


Fig. 65

INDEX SLIDE MECHANISM



WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedures.

Index Slide Mechanism - Removal

NOTE: Refer to diagram Indexing Slide mechanism Assembly.

1. Remove knife per KNIFE- REMOVABLE (NON N - MODEL SLICER) or KNIFE - NON REMOVABLE (N - MODEL SLICER).
2. Pull down gauge plate boot from special plate and bracket.

NOTE: Take note of gauge plate boot and index slide boot, orientation for installing.

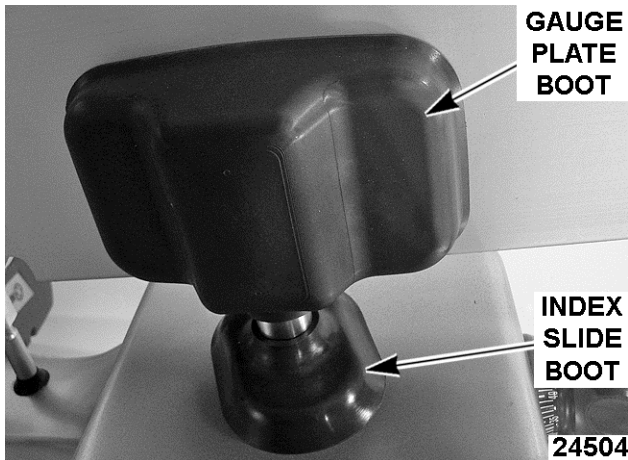


Fig. 66

3. Remove GAUGE PLATE ASSEMBLY.
4. Loosen three set screws to free gauge plate support from index slide mechanism.
 - A. Pull gauge plate support from slide.

NOTE: When the three set screws in the gauge plate support are tightened, torque them to 120 in.*lbs. Ensure they seat on V groove in slide

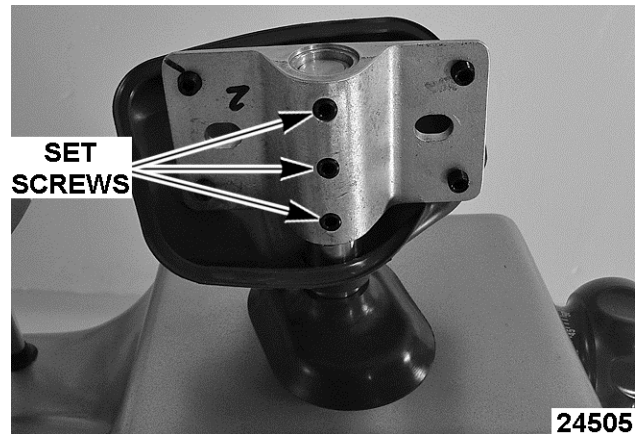


Fig. 67

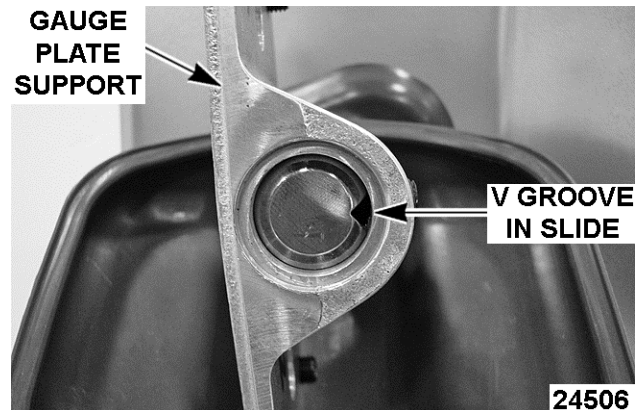


Fig. 68

5. Lift gauge plate and index slide boot from slide.
6. Lift retainer cover from slide.

NOTE: Take note of index slide boot orientation for installing.

NOTE: When index slide boot is installed Chevron ALC-EPO grease should be applied to the flange that is against the base.

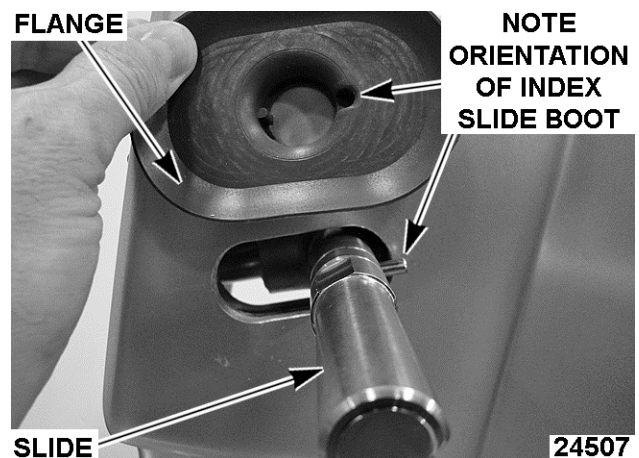


Fig. 69

7. Remove AUTO DRIVE MECHANISM (HS7 & HS9).

8. Turn index knob as required to remove the three screws holding the index slide/support mechanism assembly to the slicer base.
9. Turn index knob to allow the most vertical movement of slide dowel pin within cam as possible.

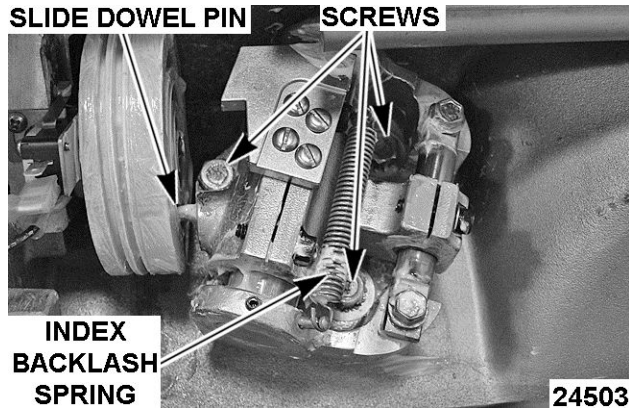


Fig. 70

10. Gently tap end of index slide mechanism with a punch & rubber mallet until dowel pins on index slide support clear the holes in slicer base.
11. Move pin side of assembly up and out away from index cam knob until the slide dowel pin is free of the cam then back toward index knob and lift from slicer base.
12. Reverse removal procedure to install.
13. Perform GAUGE PLATE ADJUSTMENT.
14. Check slicer for proper operation.

Index Slide Mechanism - Disassembly

NOTE: Refer to diagram Indexing Slide mechanism Assembly.

1. Remove interlock stop bracket.
2. Remove index backlash spring.
3. Loosen three clamping screws.
 - A. Remove bolts securing anti-rotation index rod to support assembly and pull anti-rotation rod from slide.
 - B. Loosen two set screws in support assembly, and slide the index slide rod from support assembly.
 - C. Remove bushings from index slide mechanism and anti rotation clamp.

Index Slide Mechanism - Reassembly

NOTE: Refer to diagram Indexing Slide mechanism Assembly.

1. Inspect index slide mechanism bores for burrs.

2. Inspect bushings for burrs.
3. Carefully insert the three bushings (squeezing lightly) into the slide mechanism making them flush with the edges of the casting.

NOTE: Splits in bushings must not line up with slots in casting.

4. Lubricate the bushings and index slide mechanism and slide rod with Chevron ALC-EPO.
5. Insert the index slide rod through the opening in the support assembly.
 - A. Insert the index slide rod through the support bore, index slide mechanism bushings and the other support bore making both ends of the rod even with the edges of the casting.
 - B. Tighten the set screws in support to fix the slide rod in place.
6. Lubricate the anti-rotation rod with Chevron ALC-EPO and insert into the index slide mechanism bushing.
 - A. Insert and tighten the two mounting screws to secure anti-rotation rod onto the support assembly.
7. Install index slide/support mechanism into slicer base. Move index knob as necessary to tighten bolts.
 - A. With assembly in place install the backlash spring.
8. Install interlock stop bracket. Leave screws loose for index slide adjustment.
9. Install GAUGE PLATE ASSEMBLY
10. Perform INDEX SLIDE MECHANISM ADJUSTMENT.
11. Perform GAUGE PLATE ADJUSTMENT.
12. Check slicer for proper operation.

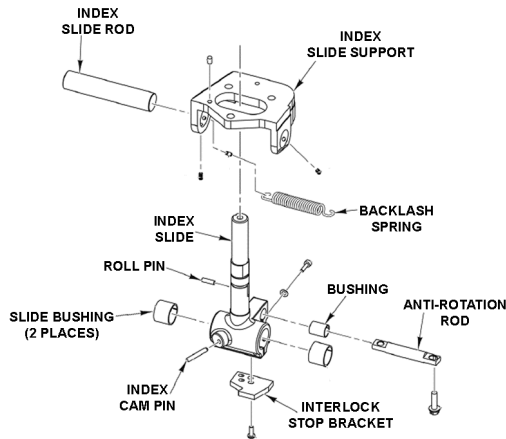


Fig. 71

24563

INDEXING CAM



WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedures.

1. Remove Sharpener - Removal.
2. Remove Carriage Tray Assembly - Removal.
3. Remove BOTTOM COVER.
4. (HS7 & HS9) Remove AUTO / MANUAL ROD ASSEMBLY (HS7 & HS9).
5. Remove Index Slide Mechanism - Removal.
6. Drive roll pin from cam.

NOTE: Rotate index knob to access pin.

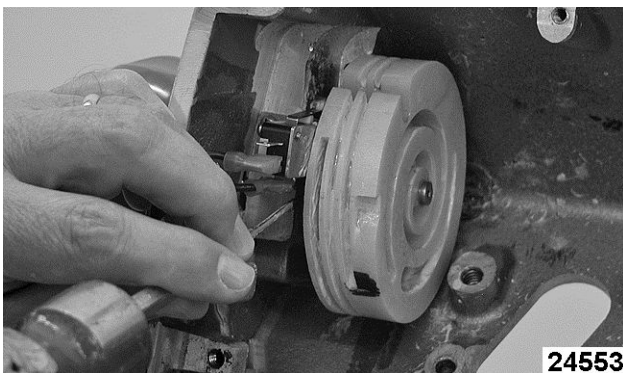


Fig. 72

7. Remove screw securing cam to shaft.

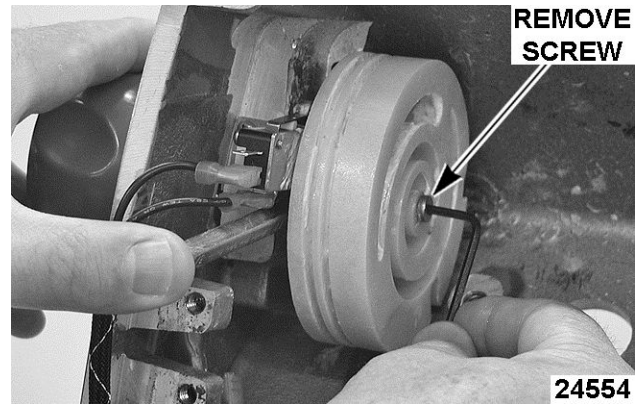


Fig. 73

8. Pull indexing cam and shim washers from shaft.

NOTE: When indexing cam is installed, the grooves should be lubricated with Lubriplate 630 AA.

9. Reverse removal procedure.
10. If cam rubs bracket install up to 6 shim washers and recheck. Make sure indexing pin does not bottom out in cam.

NOTE: Nominal is 3 to 6 shim washers.

11. Perform AUTO / MANUAL BELT GRIP ADJUSTMENT (HS7 & HS9).
12. Perform GAUGE PLATE ADJUSTMENT.
13. Check slicer for proper operation.

CONTROL BOARD & KEYPAD (HS6 & HS8)



WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedures.

1. Remove Sharpener - Removal.
2. Remove Carriage Tray Assembly - Removal.
3. Remove BOTTOM COVER.
4. Disconnect lead wires from control board.
5. Remove screws securing control board and mylar to keypad housing and remove board.

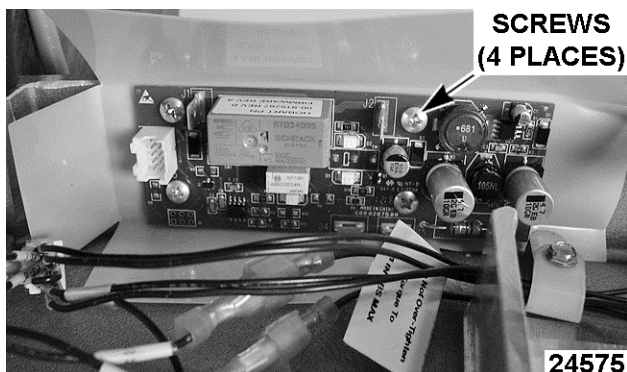


Fig. 74

6. Remove mylar from keypad housing.

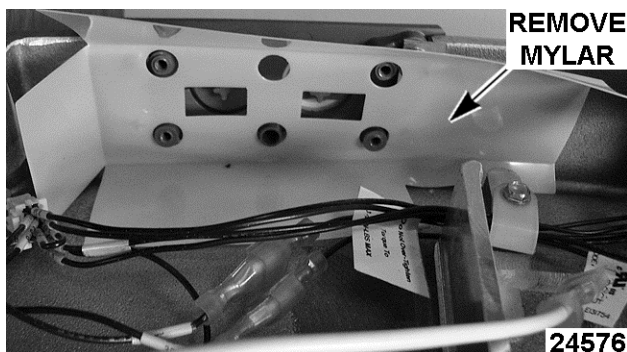


Fig. 75

7. Remove 4 screws, washers, and 2 bezel mounting washers securing keypad housing to slicer base.

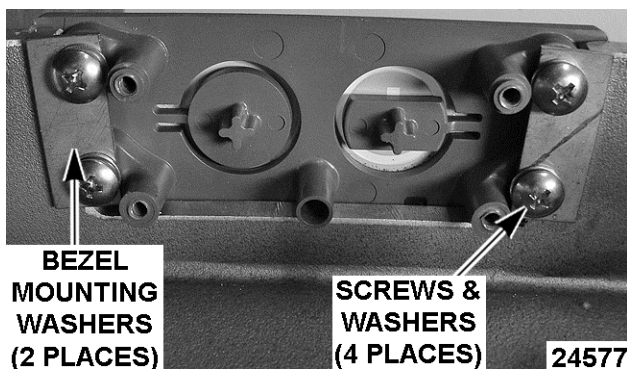


Fig. 76

8. Remove overlay from keypad housing.

NOTE: Overlay is not reusable. Clean off any residue before installing replacement overlay.

NOTE: Keypad housing come with overlay installed.

9. Reverse the procedure to install.

NOTE: Do not over tighten control board mounting screws causing damage to keypad housing.

10. Check slicer for proper operation.

CONTROL BOARD (HS7 & HS9)



WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedures.

Control Board - Removal

1. Remove BOTTOM COVER.
2. Note location and disconnect electrical wire connections.
3. Loosen two screws securing IGBT of control board to slicer base.

NOTE: Heat sink pad will need to be replaced any time control board is removed.

4. Remove four screws securing board to slicer.

REMOVE SCREWS (4 PLACES) **LOOSEN TWO SCREW**

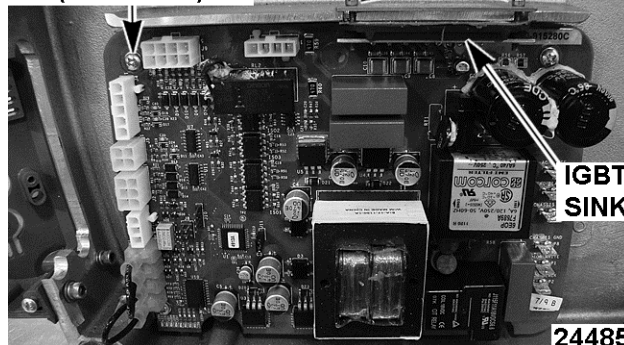


Fig. 77

5. Remove control board.

Control Board - Replacement

1. Reverse removal procedure to install.

NOTE: Install replacement pad between control board IGBT and heat sink.

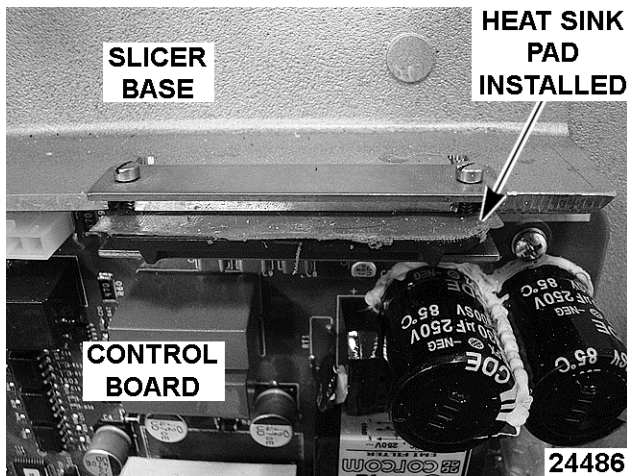


Fig. 78

2. Tighten screws to secure heat sink to slicer base.

NOTE: Do Not over tighten screws securing heat sink to slicer base.

3. Check slicer for proper operation.

KEYPAD (HS7 & HS9)



WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedures.

Keypad Board - Removal

1. Perform Sharpener - Removal.
2. Perform Carriage Tray Assembly - Removal.
3. Remove BOTTOM COVER.
4. Remove screws securing lower bezel cover.



Fig. 79

5. Disconnect electrical connectors.
6. Remove screws securing keypad.

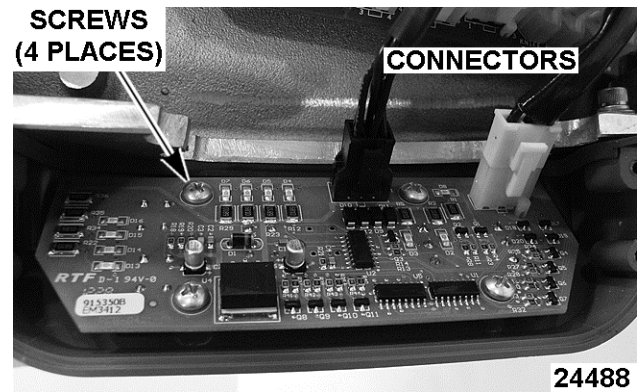


Fig. 80

7. Remove keypad.
8. Remove overlay from bezel.

NOTE: Overlay is not reusable. Clean off any residue before installing replacement overlay.

NOTE: Keypad housing come with overlay installed.

9. Reverse removal procedure to install.

NOTE: Seal lower bezel cover with RTV.

10. Check slicer for proper operation.

Keypad Housing - Replacement

1. Perform keypad board removal.
2. Remove bolts securing keypad housing and bezel gasket to slicer base.

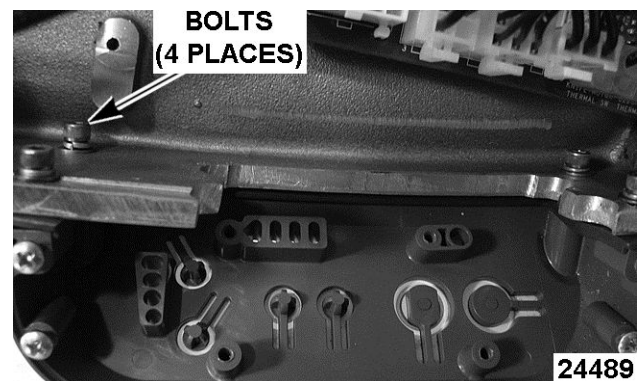


Fig. 81

3. Reverse removal & replacement procedures to install.
4. Check slicer for proper operation.

GAUGE PLATE CLOSED TO STOP SWITCH 2S (HS8 & HS9)



WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedures.

1. Perform Sharpener - Removal.
2. Perform Carriage Tray Assembly - Removal.
3. Remove BOTTOM COVER.
4. Remove four screws securing end of auto / manual selector rod mounting block to slicer base.

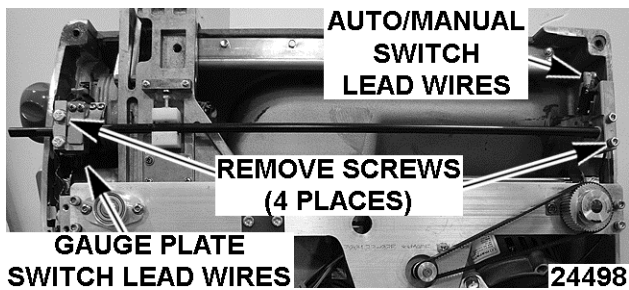


Fig. 82

5. While holding end of rod (selector knob end) pull opposite end away from base to remove auto / manual selector rod.

NOTE: Take note of close to stop actuator and index cam position for installation. Gauge plate in the closed position, actuator will be close to switch housing. Gauge plate in open position, actuator will be away from switch housing.

NOTE: Hold index cam close to stop actuator in place with finger to prevent pin from propelling away.

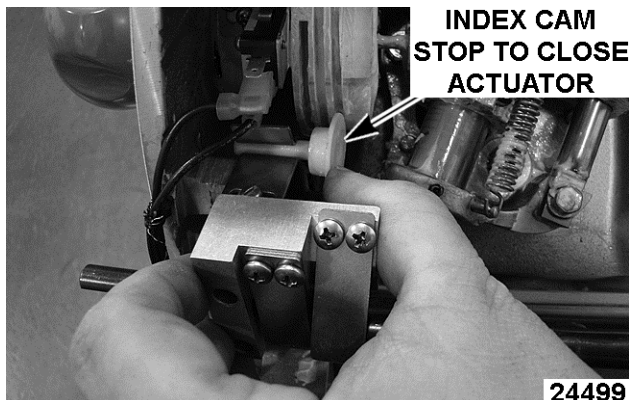


Fig. 83

6. Note location of lead wires to auto / manual switch & gauge plate switch, and disconnect.

NOTE: N.O. & COM terminals used.

7. Remove two screws securing switch to auto / manual selector rod mounting block.

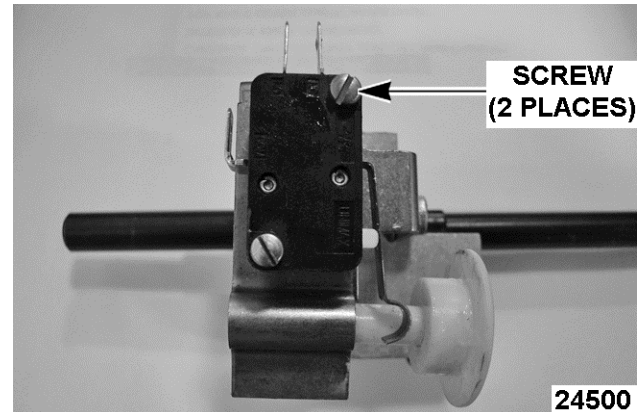


Fig. 84

8. Remove two short and one long screws securing bracket to mounting block.
9. Reverse procedure to install.
10. Verify both mounting bracket screws at middle location of slotted holes.

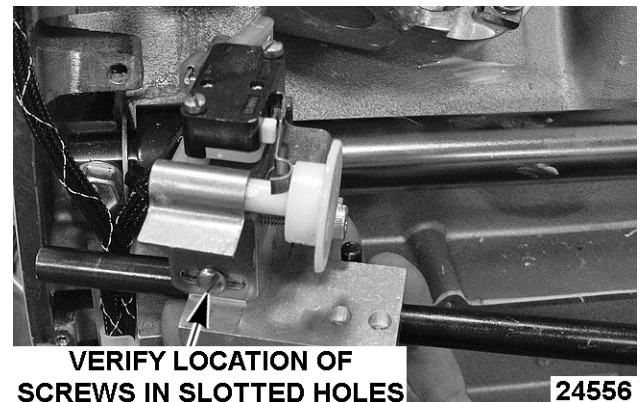


Fig. 85

11. Install auto drive mounting block with rod hole position further from the slicer base.

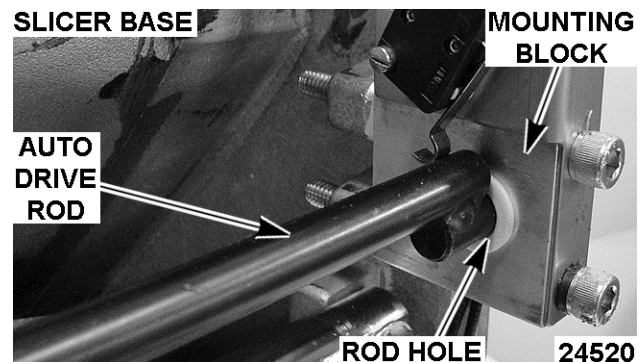


Fig. 86

12. Perform GAUGE PLATE CLOSED TO STOP SWITCH 2S ADJUSTMENT (HS8 & HS9).

13. Verify AUTO / MANUAL SWITCH 5S ADJUSTMENT (HS7 & HS9).
14. Verify AUTO / MANUAL BELT GRIP ADJUSTMENT (HS7 & HS9).
15. Check slicer for proper operation.

CARRIAGE TRAY INTERLOCK SWITCH 1S (HS8 & HS9)



⚠ WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedures.

1. Perform Sharpener - Removal.
 2. Perform Carriage Tray Assembly - Removal.
 3. Remove BOTTOM COVER.
 4. Note location of lead wires and disconnect.
- NOTE:** N.O. & COM terminals used.
5. Remove screws securing switch bracket to slicer base.

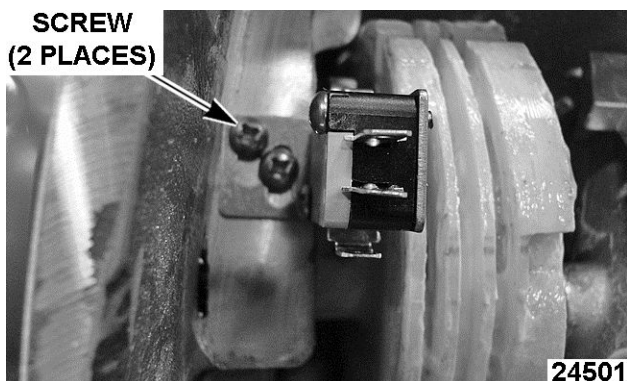


Fig. 87

6. Remove screws securing switch to bracket.
7. Reverse procedure to install.

NOTE: Install switch bracket such that mounting screws positioned at top of slotted holes and tighten screws.

NOTE: Do not allow cam interlock pin to deform the switch actuator when engaged.

NOTE: Do not allow switch to contact index cam. If so, install shim washers onto index knob shaft. Nominal is 3 to 6 shim washers.

8. Check slicer for proper operation.

AUTO / MANUAL SWITCH 5S (HS7 & HS9)



⚠ WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedures.

1. Perform Sharpener - Removal.
2. Perform Carriage Tray Assembly - Removal.
3. BOTTOM COVER.
4. Note location of lead wires and disconnect.

NOTE: N.O. & COM terminals used.

5. Remove two screws securing switch to auto / manual rod mounting block.

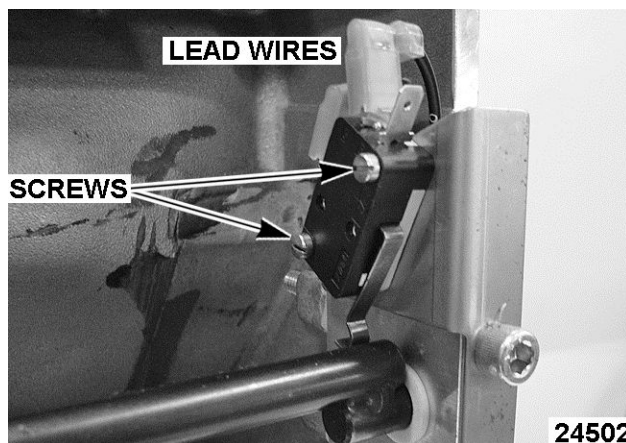


Fig. 88

6. Reverse procedure to install.
7. Position switch such that switch actuator is engaged when auto / manual selector rod is turned to the auto position.

NOTE: Do not allow rod to bend or damage switch actuator.

8. Check slicer for proper operation.

CARRIAGE HOME SWITCH 3S (HS7, HS8 & HS9)



⚠ WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedures.

1. Perform Sharpener - Removal.

2. Perform Carriage Tray Assembly - Removal.
3. Remove BOTTOM COVER.
4. Note location of lead wires and disconnect.
5. Remove lock nut securing switch to slicer base.

NOTE: Use of double wrenches required during removal and installation of switch.

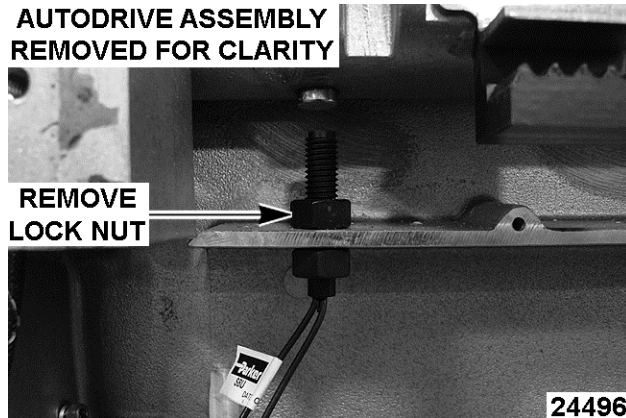


Fig. 89

6. Reverse the procedure to install.
7. Adjust switch using lock nuts to obtain switch actuation at:
 - Closes at 10mm (3/8") when carriage moves towards home position. #2 LED illuminated.
 - Opens at 15mm (9/16") when the carriage moves away from home position. #2 LED not illuminated.

NOTE: HS8 slicer does not have diagnostic LED's. Ohm meter will need to be used to check for continuity at specified distances.

NOTE: This measurement is taken near rod from end of transport to rubber bumper. Make sure rubber bumper is pushed all the way towards the base until it stops.

8. Secure lock nuts to a maximum torque setting of 14 inch lbs.
9. Check slicer for proper operation.

KNIFE RESET SWITCH 4S (HS8 & HS9)



⚠ WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedures.

1. Perform Sharpener - Removal.
2. Perform Carriage Tray Assembly - Removal.
3. Remove BOTTOM COVER.
4. Note location of lead wires and disconnect.
5. Remove lock nut securing switch to slicer base.

NOTE: Use of double wrenches required during removal and installation of switch.

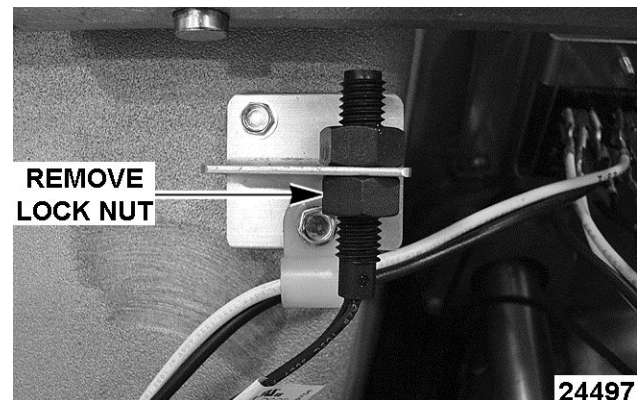


Fig. 90

6. Reverse the procedure to install.
7. Position switch with 6 threads showing below nut.

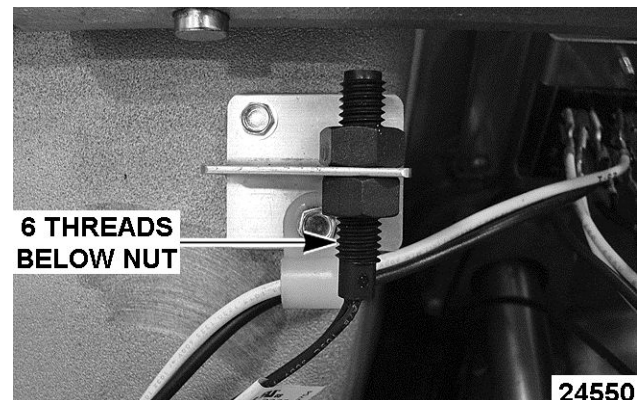


Fig. 91

8. Secure lock nuts to a maximum torque setting of 14 inch lbs.
9. Check slicer for proper operation.

POLY-V BELT



⚠ WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedures.

Poly-V Belt - Removal

1. Perform Sharpener - Removal.
2. Perform Carriage Tray Assembly - Removal.
3. Remove BOTTOM COVER.
4. Loosen nuts on belt tensioning adjustment screw nuts.
5. Loosen screw holding tensioner bracket to motor plate.
6. Loosen screws holding motor plate to motor.
7. Pivot motor to allow slack in poly-V belt and remove from pulleys.

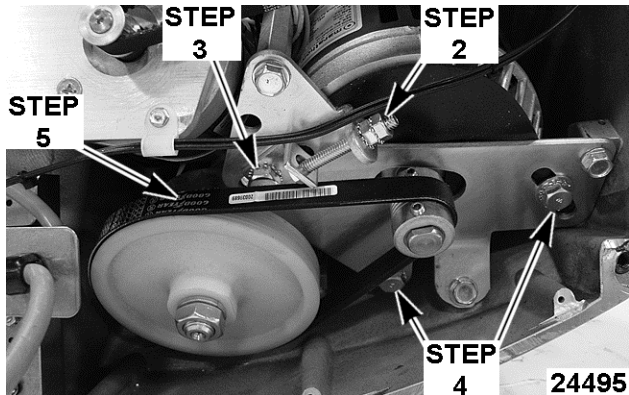


Fig. 92

Poly-V Belt - Replacement

1. Install poly-V belt onto pulleys.
2. Perform procedures POLY- V BELT ADJUSTMENT AND PULLEY ALIGNMENT.
3. Reassemble slicer and check for proper operation.

SERVICE PROCEDURES AND ADJUSTMENTS

GASKET INSPECTION

⚠ WARNING The slicer knife is very sharp. Exercise extreme caution when working near the knife.

Gaskets shown below must be inspected at intervals not to exceed 6 months. If gasket is worn or damaged replace as required.

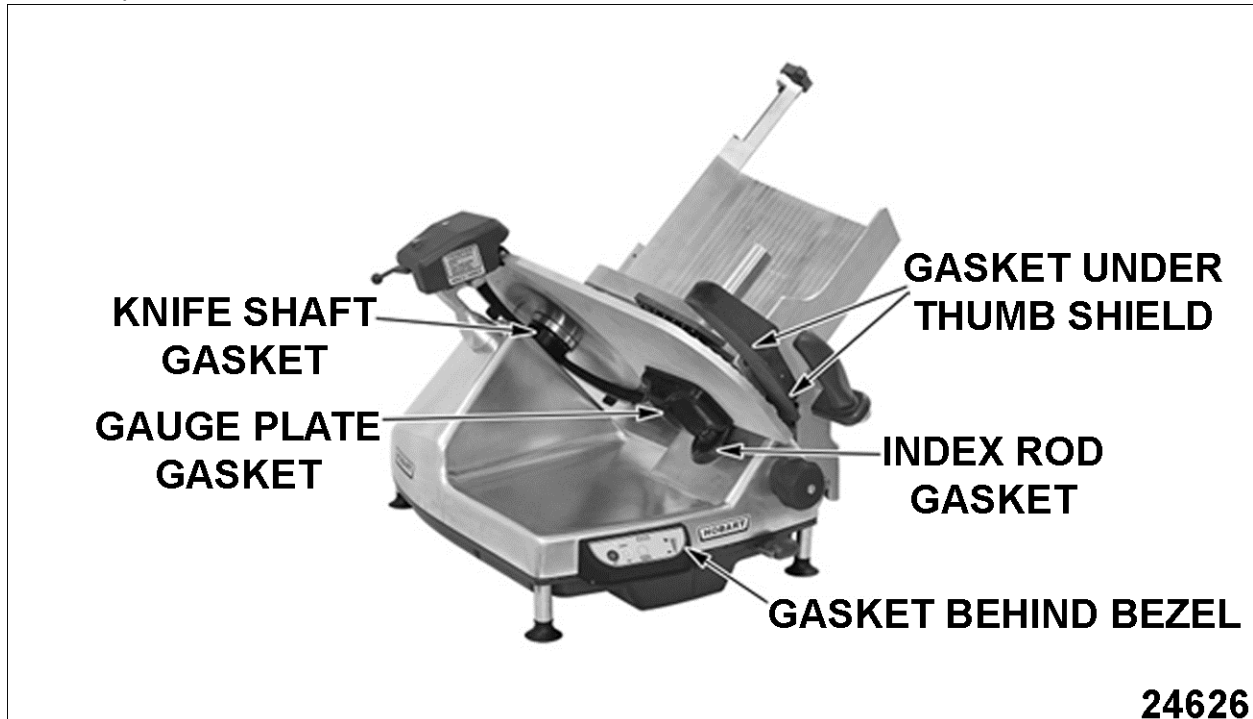


Fig. 93

TOP KNIFE COVER CHECK/ADJUSTMENT

⚠ WARNING The slicer will be operating during portions of this check. Make certain that the gauge plate is completely closed anytime the slicer is running.

⚠ WARNING The slicer knife is very sharp. Exercise extreme caution when working near the knife.

Top Knife Cover - Check

1. Perform this procedure anytime:
 - A. A new knife is installed.
 - B. If product is going under top knife cover.
 - C. If product is being torn by top knife cover.

D. Slicer has unsatisfactory slice quality.

2. Remove CARRIAGE TRAY AND MEAT GRIP ASSEMBLY and use tray arm interlock key to allow slicer to be started.(HS8, HS9)
3. Check to ensure top knife cover is installed correctly. The knob should be locked in position on magnet.
4. Lay a six inch straight edge near center of top knife cover and slowly move it toward knife until straight edge touches outer 1/3 of knife face, or leading end of straight edge extends beyond cutting edge of knife.

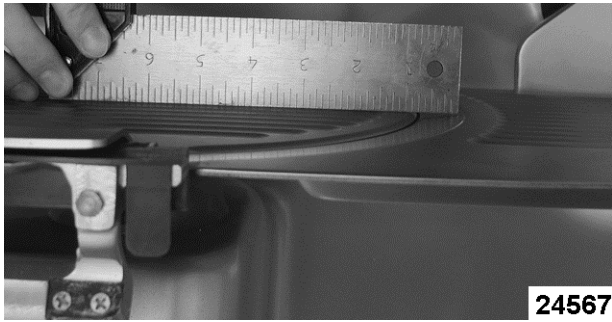


Fig. 94

- A. If straight edge touches 1/3, repeat at several locations and ensure the contact points are consistent.

NOTE: Check with straight edge at several places from center out. All contact points should make contact at the same relative place within outer 1/3 of knife edge.

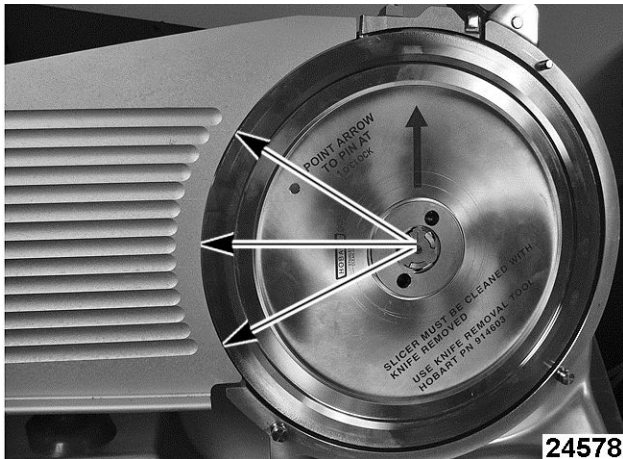


Fig. 95

- B. If straight edge does not touch face of knife at one or more test points, perform Top Knife Cover - Adjustment.
- C. If knife is new, straight edge must touch face of knife. If straight edge does not touch face of knife, perform Top Knife Cover - Adjustment.
- D. If knife has been sharpened several times, check diameter of knife. If knife diameter is less than 12-3/4", replace knife.

Top Knife Cover - Adjustment

1. Turn rulon screw in fully to avoid contact with cover.

NOTE: Non-removable knives have a fixed non-adjustable rulon screw.

2. Reform top knife cover by lightly tapping with a rubber mallet.

NOTE: Fine adjustments can be accomplished by adjusting tapered pins on ring guard.

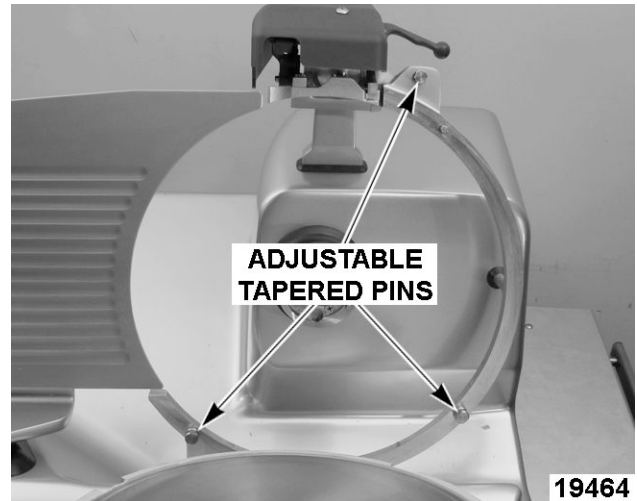


Fig. 96

3. If top knife cover cannot be reformed to satisfactory performance, replace top knife cover and recheck.
4. After cover properly adjusted, perform RULON SCREW ADJUSTMENT.

RING GUARD ADJUSTMENT

Ring Guard - Check

1. Remove TOP KNIFE COVER.
2. Remove ring guard cover.
3. Ring guard to knife gap should be 0.120" along diameter of ring guard.
4. If gap not achieved, perform Ring Guard - Adjustment

Ring Guard - Adjustment

1. Remove screws securing transport roller bar to slicer base and remove from transport.

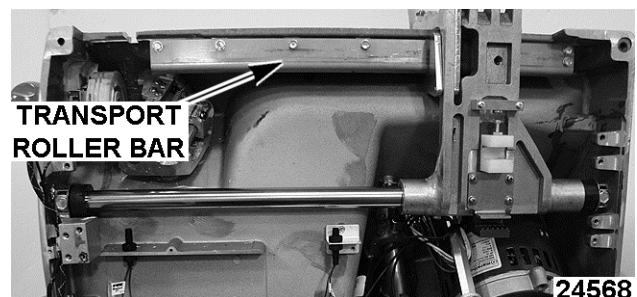


Fig. 97

2. Remove ring guard post screw.



Fig. 98

3. Use ring guard post to adjust gap between ring guard and knife.

NOTE: Post is threaded into slicer base.

NOTE: If ring guard is damaged replace and perform adjustment.

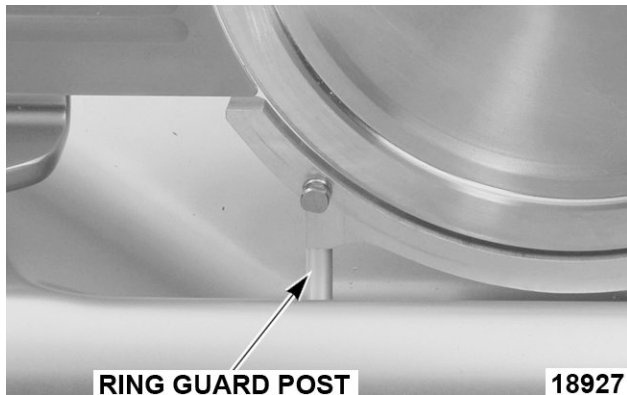


Fig. 99

4. Apply Loctite 271 to ring guard post screw threads.
 5. Tighten ring guard post screw.
- NOTE:** If results are not satisfactory, replace knife ring guard
6. Install transport roller bar.
 7. Install ring guard cover.
 8. Install TOP KNIFE COVER
 9. Check slicer for proper operation.

AUTO / MANUAL BELT GRIP ADJUSTMENT (HS7 & HS9)

1. Remove Sharpener - Removal.
2. Remove Carriage Tray Assembly - Removal.
3. Remove BOTTOM COVER

4. Verify auto / manual drive selector is in manual position.
5. Loosen 4 screws to adjust belt grip bracket to touch auto drive belt.

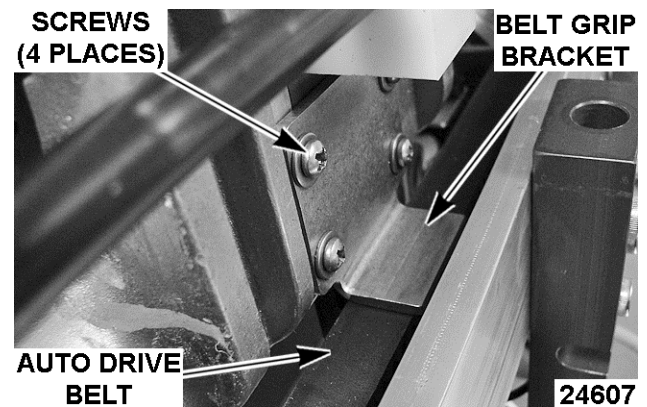


Fig. 100

6. Tighten screws securing belt grip bracket.
7. Place slicer auto / manual selector knob in the auto position.
8. Loosen lock nut to adjust belt grip screw to touch belt grip magnet and 0.005" clearance from belt grip block to selector rod. Then tighten lock nut.

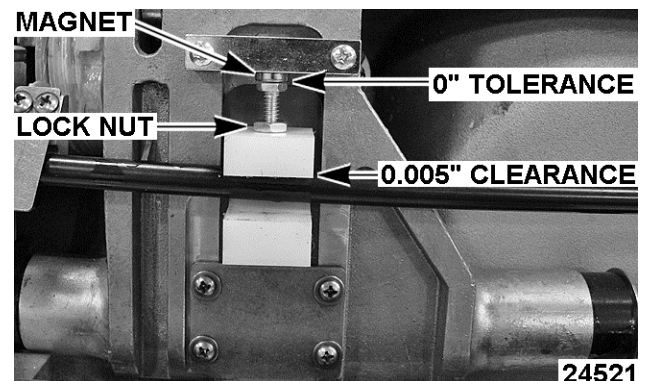


Fig. 101

9. Reassembly slicer and check for proper operation.

POLY- V BELT ADJUSTMENT AND PULLEY ALIGNMENT



WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedures.

Poly-V Belt Tension Check

1. Access poly-V belt by removing BOTTOM COVER.

2. Follow Belt Tension Gauge Instructions to test belt tension.

- A. Free feeler bar from carrying position by unscrewing upper sleeve.
- B. Position feeler bar perpendicular to upper sleeve and pull feeler bar down.

NOTE: Feeler bar must be moved to bottom before each test.

- C. Turn upper sleeve until bottom aligns with the required 50 Lbs. (new belt) or 35 Lbs. (used belt) of belt tension. Normal tensions are read on the black scale.

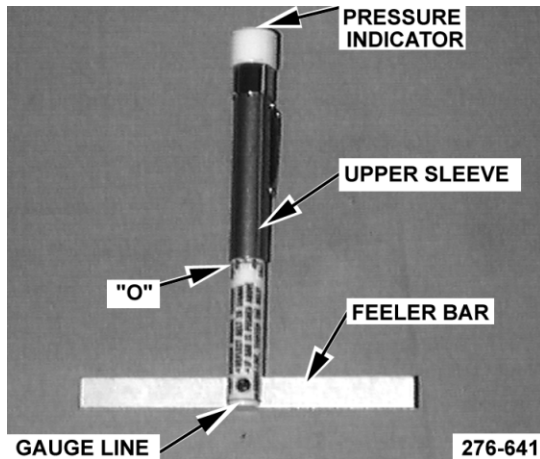


Fig. 102

3. Align feeler bar along belt close to the center of the span between the center lines of the two pulleys.

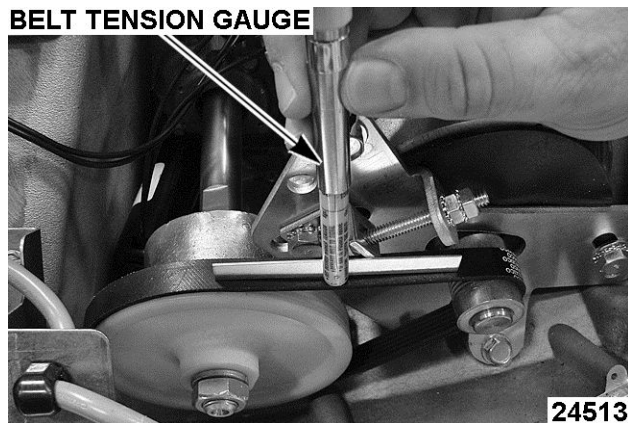


Fig. 103

4. With a finger over the cap of the gauge, press down perpendicularly until pressure indicator touches the finger. This will occur at the same time 0 is aligned with the bottom of upper sleeve.
5. Lift gauge from belt and observe where bottom of feeler bar has come to rest, in relation to the gauge line.

- A. If bottom of feeler bar is above gauge line, pull feeler bar down. Tighten belt tension and re-test.
- B. If bottom of feeler bar is below gauge line, pull feeler bar down. Loosen belt tension and re-test.
- C. If bottom aligns with gauge line, proper tension is present.

Poly-V Belt Tension Adjustment

1. Loosen nuts on belt tensioning adjustment screw.
2. Loosen screws that allow motor to pivot.
3. Pivot motor in proper direction by adjusting belt tensioning adjustment screw.
4. Tighten nuts on adjustment screw and motor mounting bolts.
5. Re-test belt tension. Repeat until 50 Lbs. (new belt) or 35 Lbs. (used belt) belt tension is present.
6. Check pulley alignment and align if necessary, as outlined under Poly-V Belt Adjustment and PULLEY Alignment.
7. Reassemble slicer.
8. Check slicer for proper operation.

Poly-V Belt Adjustment and PULLEY Alignment

NOTE: The pulley alignment should be checked every time preventive maintenance is performed and each time the belt or pulleys are removed or replaced. The poly-v belt tension should be checked before alignment of the pulleys.

1. Access poly-V belt by removing BOTTOM COVER.
2. Check poly-v belt tension by performing Poly-V Belt Tension Check.
3. Position a straight edge across both pulley hubs. The straight edge should touch the pulleys at the four points indicated.

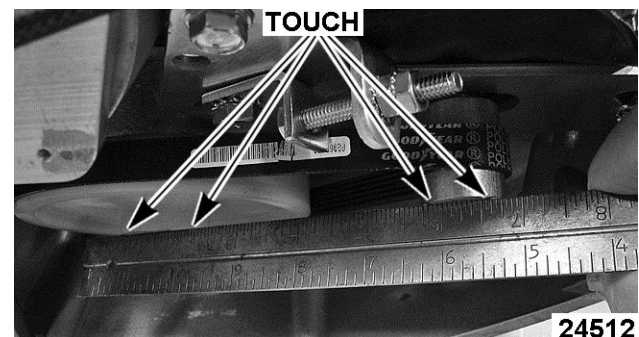


Fig. 104

- A. If pulleys are not touching the straight edge at all four points, loosen the two set screws in motor pulley and move pulley in the required direction. Tighten the set screws.
- B. Perform Poly-V Belt Tension Check and Poly-V Belt Tension Adjustment.
4. Reassemble in reverse order.
5. Check slicer for proper operation.

CARRIAGE TRAY ASSEMBLY ADJUSTMENTS

Carriage Tray Assembly - Introduction

The carriage tray assembly is adjusted properly when

- Tray is square to knife edge.
- The two adjusting screws in transport assembly contact the drive studs in tray arm simultaneously.
- Clearance between three specific points on the edge of carriage tray and knife are within tolerances shown in the table.



WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedures.

Squareness To Knife Check And Adjustment

1. Check and adjust the squareness.
2. Remove TOP KNIFE COVER.
3. Securely attach carriage tray assembly to transport assembly.
4. Check squareness of carriage tray to knife.



Fig. 105

5. Remove plugs in transport behind adjusting screws.
6. Loosen jam nuts from both adjustment screws.

7. Turn one set screw in fully.
8. Adjust tray with other adjusting screw in transport as needed to square the arm. Lock in place using jam nuts.
9. With carriage tray assembly resting on first adjustment set screw, turn the other set screw out until it makes contact with tray arm stud. Lock in place using jam nut.

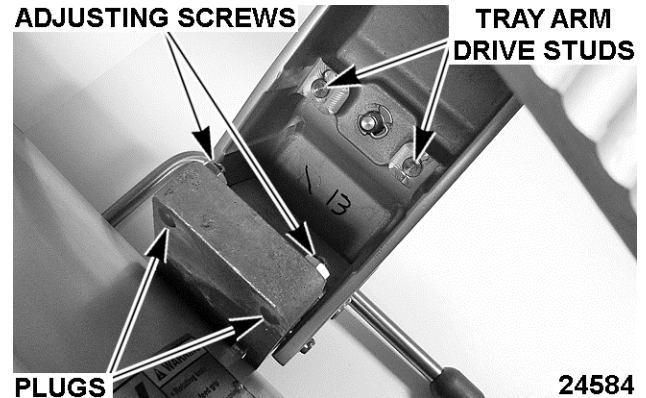


Fig. 106

10. Verify both screws are touching drive studs by inserting a thin piece of paper between adjusting screws and tray arm drive studs.
 - A. Close the arm against adjusting screws.
 - B. Open the arm, remove the paper and check it for signs of contact. Both screws must make contact with the tray arm drive studs.

NOTE: If squareness not obtainable, check for excessive up and down travel of the carriage transport that may be caused by roller bearing.

Carriage Tray To Knife Gap Check & Adjustments

1. Check and adjust carriage tray to knife gap.
 - A. Take measurements at three points.

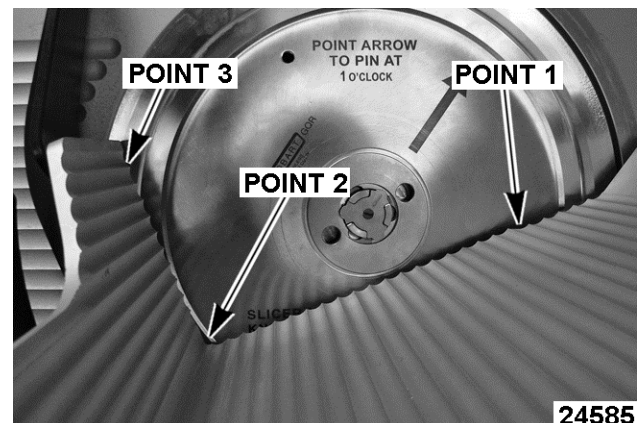


Fig. 107

- B. Move tray until point 1 (leading edge of tray) is above knife edge. Measure the gap and record the dimension (gap must be between 0.060" to 0.070").

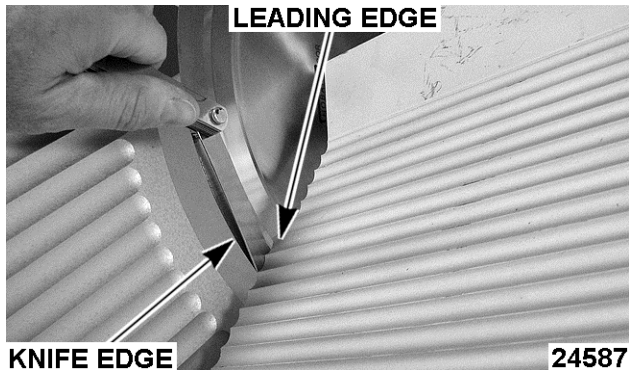


Fig. 108

- C. Move tray until point 2 (tray "V") is above knife edge. Measure the gap and record the dimension (gap must be between 0.060" to 0.070").

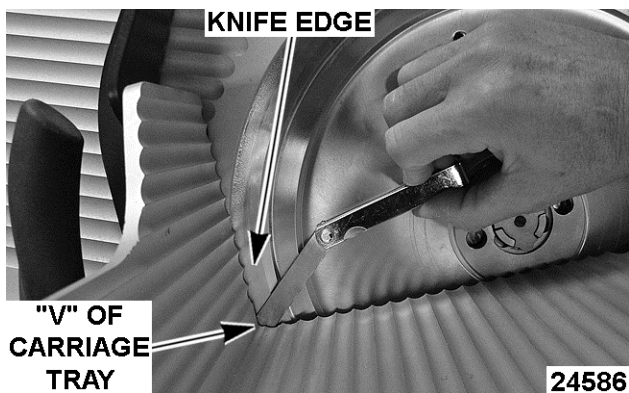


Fig. 109

- D. Move tray until point 3 (trailing edge) is above knife edge. Measure the gap and record the dimension (gap must be between 0.060" to 0.070").

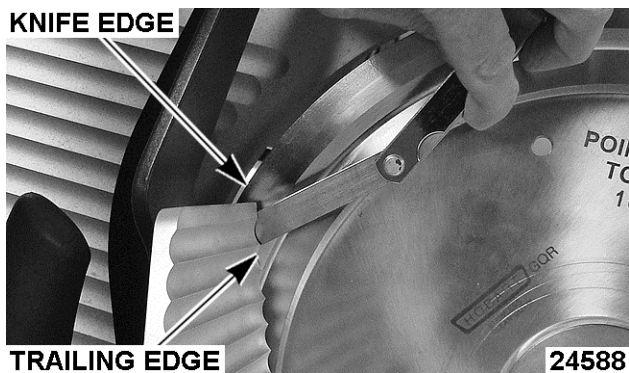


Fig. 110

2. To make adjustments, loosen both shoulder screws securing tray to arm.

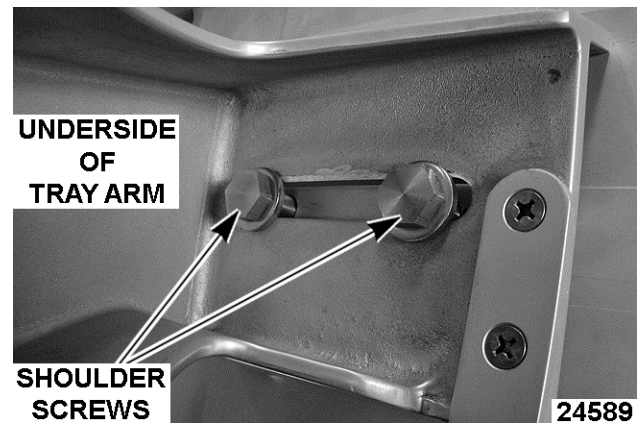


Fig. 111

3. Reposition tray as required.
4. Torque screws in increments up to 180 inch Lbs.
5. Recheck all points and readjust as needed.

OVERTURN SCREW ADJUSTMENT

1. Remove Sharpener - Removal.
2. Remove Carriage Tray Assembly - Removal.
3. Adjust overturn screw within 0.005" maximum, but with no interference with the transport roller bar, loosen the locknut and turn overturn screw until proper clearance is present.

VIEW FROM SWITCH END

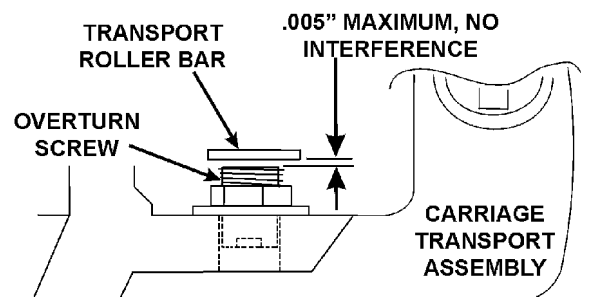


Fig. 112

4. Tighten locknut.
5. Install carriage tray assembly, move to operating position and move it back and forth to its full travel.
6. Operate transport arm assembly several time to verify no grabbing or binding.
7. Check slicer for proper operation.

ROLLER BEARING ADJUSTMENT

1. Remove Sharpener - Removal.

2. Remove Carriage Tray Assembly - Removal
3. Insert tray arm interlock key.
4. Remove BOTTOM COVER.
5. Remove Auto / Manual Rod - Removal.
6. Remove 8 screws securing transport roller bar to slicer base. Slide bar out from roller bearing.
7. Loosen screw securing adjustment screw.
8. Turn adjustment screw and adjust roller bearing to its center position.

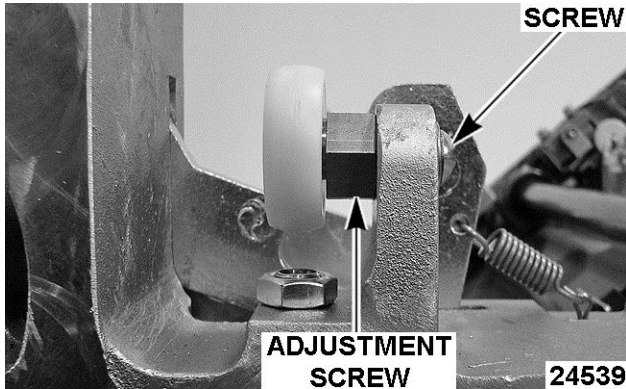


Fig. 113

9. Move transport to home position and engage interlock. If not, adjust roller bearing and recheck.
10. Reassemble slicer.
11. Perform OVERTURN SCREW ADJUSTMENT.
12. Perform AUTO / MANUAL SWITCH 5S ADJUSTMENT (HS7 & HS9).
13. Perform AUTO / MANUAL BELT GRIP ADJUSTMENT (HS7 & HS9).
14. Perform CARRIAGE TRAY ASSEMBLY ADJUSTMENTS.

NOTE: HS 8 & HS9 only, when properly adjusted cam lock pin will insert into index cam interlock slot.

15. Check for proper operation.

RULON SCREW ADJUSTMENT

⚠ WARNING The slicer knife is very sharp. Exercise extreme caution when working near the knife.

NOTE: Only slicers with removable knives have an adjustable rulon screw. Non-removable knives have a fixed rulon plug.

NOTE: Rulon screw is properly adjusted when it only comes into contact with the top cover after approximately 10 lbs. of pressure is applied to outer

edge of knife cover and the knife cover does not scrape the knife.

NOTE: Top knife cover must be in proper adjustment. If not, perform TOP KNIFE COVER CHECK/ADJUSTMENT.

Rulon Screw Test

1. Remove Carriage Tray Assembly - Removal.
2. Fully close gauge plate and use tray arm interlock key to disengage interlocks (HS8 & HS9).
3. Turn knife on.
4. Use V-belt tension tester to apply 10 lbs of force to outer edge of top knife cover.



Fig. 114

- A. If scraping sound is not present and / or rulon screw contacts top knife cover, rulon screw is properly adjusted.
- B. If scraping sound is present and / or rulon screw does not contact top knife cover, perform Rulon Screw - Adjustment.

Rulon Screw - Adjustment

NOTE: Top knife cover must be in proper adjustment. if not, perform TOP KNIFE COVER CHECK/ADJUSTMENT

1. Remove top cover.
2. Turn rulon screw CW to a height of 0.115".

NOTE: Rulon screw has LH threads.



Fig. 115

3. Replace top cover.
4. Recheck with V-belt tension tester to apply 10 lbs of force to outer edge of top knife cover.
5. If rulon screw does not contact top knife cover:
 - A. Remove top knife cover and turn rulon screw CW 1/4 turn outward.
6. Replace top knife cover and recheck.
 - A. Repeat the procedure until conditions met. Rulon screw contacts top knife cover and no scrapping sound of knife to top knife cover.

NOTE: If after 10 lbs. of force applied and rulon screw contacts top knife cover with scraing present, check issues with top knife cover or adjustment such as knife shaft not fully seated.

NOTE: If rulon screw cannot be properly adjusted or is worn, remove rulon screw and discard. When replacing rulon screw, wrap threads with teflon tape prior to install.

7. Replace all parts previously removed.
8. Check for proper operation.

KNIFE MOTOR TEST

Knife Motor Ohm Test

1. Remove Sharpener - Removal.
2. Remove Carriage Tray Assembly - Removal.
3. Remove BOTTOM COVER.
4. Remove Auto Drive Mechanism - Removal.
5. Note location of motor lead wires and disconnect.
6. Connect a volt/ohm meter to motor lead wires and verify ohm readings per chart below.
 - A. If ohm readings are out of spec, replace motor. See KNIFE MOTOR AND BRACKET ASSEMBLY.

MOTOR RESISTANCE				
Volts	Hertz	Min.	Nominal	Max.
115	60	2.28	2.40	2.52
230	60	9.12	9.60	10.08
115	50	2.39	2.52	2.65
230	50	9.59	10.09	10.59

Knife Motor Continuity Test

1. Verify no continuity between motor lead wires to motor chassis.
2. Verify there is continuity between chassis and motor ground lead wire.
3. Check gauge plate switch 2S and auto / manual switch 5S for proper operation.

AUTO MOTOR TEST (HS7 & HS9)

1. Unplug power cord to slicer.
2. Remove Sharpener - Removal.
3. Remove Carriage Tray Assembly - Removal and insert interlock service tool.
4. Remove BOTTOM COVER.
5. Disconnect J6 connector from control board.
6. Verify resistance between any two leads on J6 connector reads 7.3 ohms \pm 10% (6.57 to 8.03 ohms acceptable).
7. If not as specified, replace auto motor. See AUTO DRIVE MECHANISM (HS7 & HS9).

NOTE: The following encoder test assuming that control board is not defective. If diagnostic passes, control auto motor is good. If diagnostic does not pass, control board could potentially be malfunctioning; however a malfunction of a control board in this area is highly unlikely.

8. Plug in power cord to slicer.
9. With J9 Connector installed on control board locate encoder diagnostic LED's.

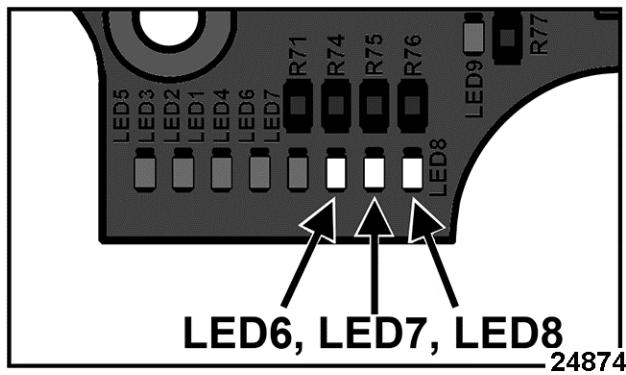


Fig. 116

10. Based on current encoder position, LED6, LED7, & LED8 or some combination will be illuminated.
11. Slowly rotate large 50T pulley CW on Auto Drive Assembly until only LED6 is illuminated.

NOTE: Pulley will turn one step at a time and have a notched feeling. Each notch is one step. Be sure to rotate pulley slowly.

12. Turn 50T Pulley CW one step at a time and verify LED sequence is as indicated. The sequence will repeat after every 6th step.

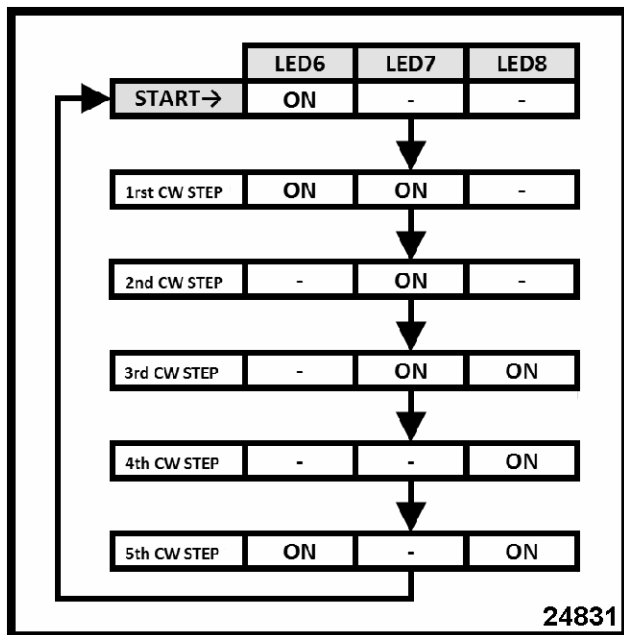


Fig. 117

13. If sequence is not as above, replace auto motor. See AUTO DRIVE MECHANISM (HS7 & HS9).

CONTROL BOARD TEST (HS6 & HS8)

NOTICE Do not attempt a direct voltage check or other in depth probing of board or connectors as damage will result. Control board functionality is based on verifying external switches, LED's, input & output voltages and a functional test using wire harness plug Part No. 00-915276 installed into J3 connector.

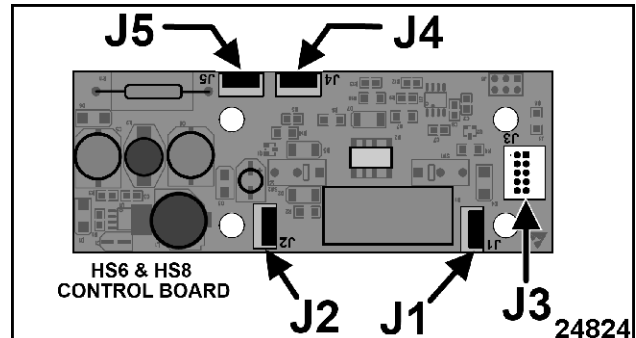


Fig. 118

1. Remove Sharpener - Removal.
2. Remove Carriage Tray Assembly - Removal.
3. Remove BOTTOM COVER.
4. Verify supply voltage of 120VAC at J1 & J4 connections Fig. 118.
5. If 120VAC not present, verify following:
 - Power cord.
 - Circuit breaker.
 - Wall receptacle supply voltage.
6. Verify following:
 - White power LED is on steady.
 - White knife on LED's are blinking.
7. If not as indicated, replace the control board. See CONTROL BOARD & KEYPAD (HS6 & HS8)
8. Verify all start conditions are met and start the slicer.
9. Verify 120VAC output to knife motor at J2 & J5 Fig. 118.
10. If 120VAC is present at J2 & J5 the issue may be with:
 - A. Knife motor. See KNIFE MOTOR TEST.
 - B. Electronic start switch. See ELECTRONIC START SWITCH.
 - C. Capacitor. See CAPACITOR.

11. If voltage is not present unplug power cord to slicer. Remove harness/connector J3 from control board and install harness Part No. 00-915276.

NOTE: This part by passes all switch requirements on HS8 slicer. This part can not be left on an HS8 slicer. This is the same harness used in HS6 slicer and can be left with HS6 slicer.

12. Verify all start conditions are met and start slicer.
13. Verify 120VAC output to knife motor at J2 & J5.
14. If no output with harness Part No. 00-915276 installed, replace control board. See CONTROL BOARD & KEYPAD (HS6 & HS8).
15. If slicer starts with Part No. 00-915276 installed, verify the following:
 - A. J3 harness.
 - B. 3S home switch (HS8. See HOME SWITCH 3S TEST (HS7, HS8 & HS9)).

CONTROL BOARD TEST (HS7 & HS9)

NOTICE Do not attempt a direct voltage check or other in depth probing of board or connectors as damage will result.

NOTE: The J11 jumper on control board is only used on model HS9. Be sure to remove the jumper when installing or replacing control board on an HS7 Slicer. If jumper not removed on an HS7 slicer proper operation will not be achieved when running in automatic mode. Ensure jumper is present on HS9 slicer.

1. Unplug power cord to slicer.
2. Remove Sharpener - Removal.
3. Remove Carriage Tray Assembly - Removal.
4. Remove BOTTOM COVER.

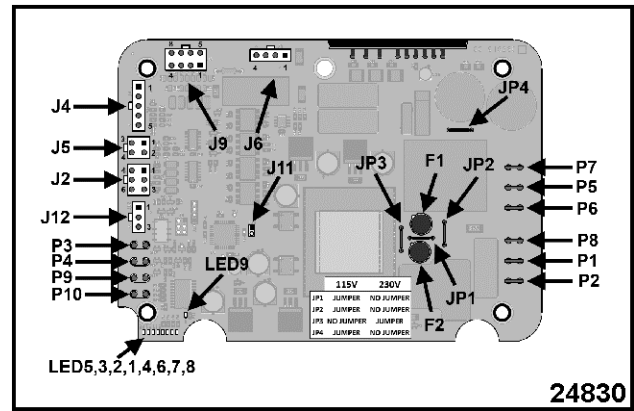


Fig. 119

5. Remove control board connectors leaving power cord & jumper wires P3, P4, P9 & P10 attached.
 6. HS9 only, verify jumper J11 is installed.
- NOTE:** J11 jumper should not be installed on HS7 slicer.
7. Plug in power cord to slicer.
 8. Verify 120VAC across P5 & P7.
 9. If 120VAC not present verify the following:
 - A. Wall receptacle voltage.
 - B. Power cord.
 - C. Circuit breaker.
 10. With 120VAC at control board verify amber LED9 is illuminated.
 - A. If LED9 is not illuminated, verify fuses F1 & F2 are known good.
 - B. If fuses are known good and LED9 is not illuminated, replace control board. See CONTROL BOARD (HS7 & HS9).
 11. Verify J12 voltages:
 - A. J12 connector: +5VDC at J12-3 to J12-2.
 - B. J12 connector: +5VDC \pm 1V at J12-3 to J12-1.
 12. Verify J2 voltages: +5VDC at J2-1 to J2-6.
 13. Verify J5 voltages: +3.3VDC at J5-1 to J5-4.
 14. Verify J4 voltages: +5VDC at J4-1 to J4-5.
 15. Verify J9 voltages:
 - A. J9 connector +5VDC at J9-1 to J8-8.
 - B. J9 connector +5VDC at J9-1 to J8-7.
 16. If J12, J2, J5, J4, & J9 voltages are not as indicated replace control board. See CONTROL BOARD (HS7 & HS9).

17. Install J12 & J2 harness.

NOTE: Board labels do not line up with LED's and are not in numerical order.

18. Install J5 harness.

- A. With gauge plate closed LED3 should be illuminated.
- B. With gauge plate open LED3 should not be illuminated.
- C. If operation is not as specified, perform GAUGE PLATE CLOSED SWITCH 2S TEST (HS8 & HS9).
- D. If switch test OK, replace control board. See CONTROL BOARD (HS7 & HS9).

19. With J5 harness installed move transport towards knife reset switch.

- A. With transport near knife reset switch LED5 should illuminate.
- B. With transport away from knife reset switch LED5 should not be illuminated.
- C. If operation is not as specified, perform KNIFE RESET SWITCH 4S TEST (HS8 & HS9).
- D. If switch test OK, replace control board. See CONTROL BOARD (HS7 & HS9).

20. Install J4 harness.

- A. With transport in home position & gauge plate closed, remove interlock service tool or actuate carriage tray interlock switch. LED1 should illuminate.
- B. Reinstall interlock service tool or un-actuate carriage tray interlock switch. LED1 should not be illuminated.
- C. If operation is not as specified, perform CARRIAGE TRAY INTERLOCK SWITCH 1S TEST (HS8 & HS9).
- D. If switch test OK, replace control board. See CONTROL BOARD (HS7 & HS9).

21. With J4 harness installed turn auto/manual lever to auto.

- A. With lever in auto LED4 should illuminate.
- B. With lever in manual LED4 should not be illuminated.
- C. If operation is not as specified, perform AUTO / MANUAL SWITCH 5S TEST (HS7 & HS9).

D. If switch test OK, replace control board. See CONTROL BOARD (HS7 & HS9).

22. Verify keypad power on LED (white) is illuminated & knife on-pause LED (green) is blinking.

- A. If operation is not as specified, test J2 harness for continuity.
- B. If harness OK, use a known good keypad and retest.
- C. If keypad LED function still not achieved, replace CONTROL BOARD (HS7 & HS9).

23. Place auto/manual lever into auto mode.

24. Verify stroke length and speed LED's illuminate and function when corresponding buttons are pressed.

- A. If operation is not as specified, test J2 harness for continuity.
- B. If harness OK, use a known good keypad and retest.
- C. If keypad LED function still not achieved, replace CONTROL BOARD (HS7 & HS9).

25. Install J6 & J9 connector.

NOTE: Output to auto motor has no effective way to test.

26. Move transport to home position, place auto/manual lever in manual then press knife on-pause button on keypad.

- A. Verify 120VAC across P1 & P2.
- B. Verify green on LED's on keypad go from blinking (standby) to on solid (running).

27. If 120VAC is not present at P1 and P2, replace control board. See CONTROL BOARD (HS7 & HS9).

28. If green on LED's to keypad does not go from blinking (standby) to on solid (running), use a known good keypad and retest.

29. If keypad LED function still not achieved, replace control board. See CONTROL BOARD (HS7 & HS9).

30. Press stop button and unplug power cord to slicer.

31. Install motor leads to P1 & P2 and verify motor runs.

32. If 120VAC is present at P1 & P2 problem is with the following:

- A. Knife motor. See KNIFE MOTOR TEST.

- B. Electronic start switch. See ELECTRONIC START SWITCH.
- C. Capacitor. See CAPACITOR.

KEYPAD TEST (HS7 & HS9)

⚠ WARNING The slicer will be operating during portions of this check. Make certain that the gauge plate is completely closed anytime the slicer is running.

1. Remove Sharpener - Removal.
2. Remove Carriage Tray Assembly - Removal.
3. Remove BOTTOM COVER.
4. Disconnect J2 & J12 connector from control board.
5. Plug power cord in and test for voltage.

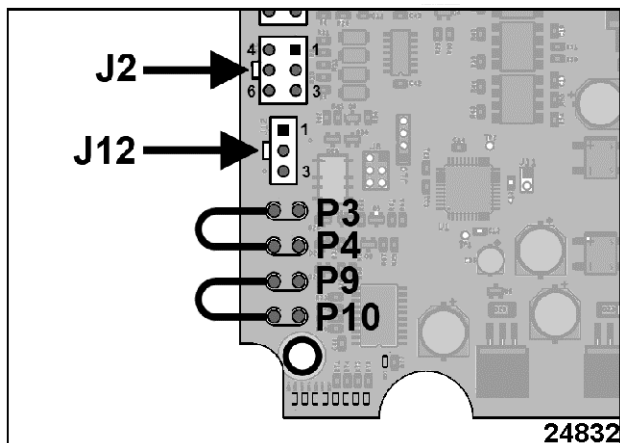


Fig. 120

6. Place meter leads across J12-1 & J12-3, meter should read approximately +5 VDC.
7. Place meter leads across J12-2 & J12-3, meter should read +5VDC.
8. Place meter leads across J2-1 & J2-6, meter should read +15VDC.
9. Place meter leads across J2-1 & J2-4, meter should read +5VDC.
10. If readings for J2 & J12 are not as specified, replace control board. See CONTROL BOARD (HS7 & HS9).
11. Connect J12 harness to control board and verify stop switch voltages:
 - A. Verify 0VDC between J12-1 & J12-3.
 - B. Verify approx. 5VDC between J12-1 & J12-3 with stop switch pressed.

12. With J12 connected, verify the knife on-pause switch voltages:
 - A. Verify 5VDC between J12-2 & J12-3.
 - B. Verify 0.7VDC between J12-2 & J12-3 with knife on-pause switch pressed.
 - C. Release the knife on-pause switch and verify voltage drops to approximately 1.5VDC.
 - D. Press stop button, voltage should return to 5VDC.

NOTE: Ensure overlay buttons depress keypad board buttons (audible click should be heard).

13. If voltages are not as indicated, check harness for continuity. Repair or replace as required.

NOTE: Harness is not wired numerically pin to pin. See figure below.

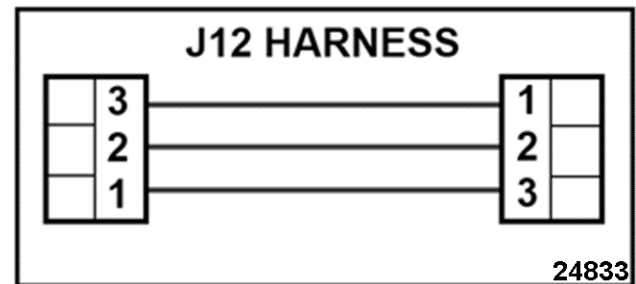


Fig. 121

14. If harness OK, replace the Keypad. See KEYPAD (HS7 & HS9).
15. Reassemble slicer and check for proper operation.

SHARPENING

Introduction

It is essential that slicer knife be sharp in order to produce thin cuts of product without shredding, tearing or creating undesirable chunks. A used knife may require 15 seconds of sharpening before a sharp edge is achieved.

Knife Sharpening

⚠ WARNING The slicer knife is very sharp. Exercise extreme caution when working near the knife.

NOTE: Sharpen only when necessary; prolonged or too frequent sharpening results in unnecessary knife wear.

1. Turn index knob fully CW to close gauge plate and place carriage in home position.
2. Remove TOP KNIFE COVER.

3. Remove plastic ring guard.
4. Thoroughly wash area around knife, exposed knife surfaces and knife edge. Grease should not be allowed to transfer from knife to sharpener.
5. To verify that knife is sharpening correctly, place four marks on back sharpened edge of knife 90 degrees apart.

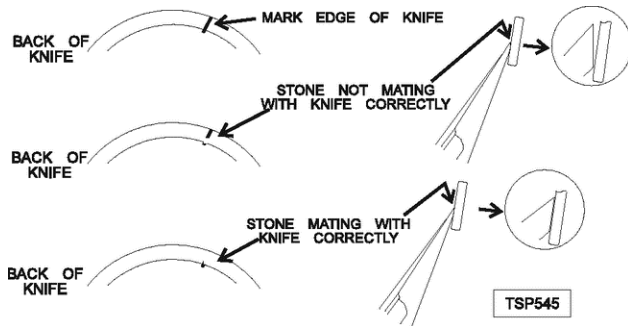


Fig. 122

6. Plug in power cord and start slicer.
7. With your left hand, pull sharpener handle until it stops. (There is a positive stop. The grinding wheel is spring loaded to prevent excessive force).

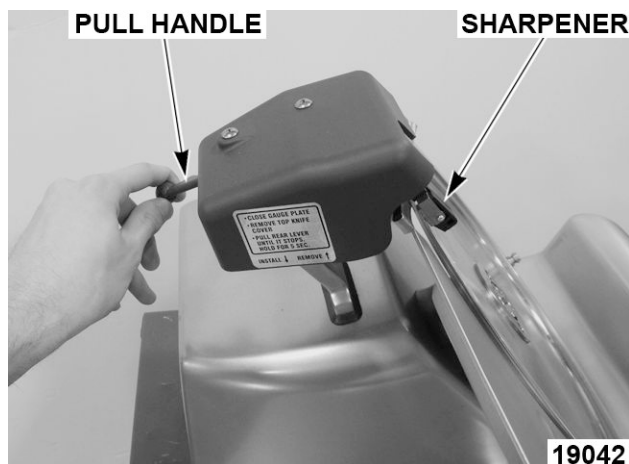


Fig. 123

8. Press and hold KNIFE / ON - PAUSE button (HS7, HS9) or KNIFE / ON button (HS6, HS8).

NOTE: Knife should be sharpened manually by operating knife with KNIFE running for 15 seconds.

9. Release handle and turn slicer off.
10. Check to see if marks have been removed on back of knife. If marks are still visible, re-sharpen and check again.
 - A. If marks are still only partially being removed, sharpener may be faulty.
11. Unplug power cord.

12. Wipe slicer with a clean damp cloth to remove any grinding particles.
13. Install ring guard and top knife cover.

QUALITY OF SLICE CHECKS

⚠ WARNING The slicer will be operating for portions of this check. Make certain that the gauge plate is completely closed anytime the slicer is running.

⚠ WARNING The slicer knife is very sharp. Exercise extreme caution when working near the knife.

1. Perform SHARPENING.
2. Perform CARRIAGE TRAY ASSEMBLY ADJUSTMENTS, and that transport is moving smoothly.
3. Check that carriage tray to knife clearance is within specifications at three positions (leading edge, 'V' and upper tip of rear wall) CARRIAGE TRAY ASSEMBLY ADJUSTMENTS.
4. Verify that there is no bind in movement of carriage throughout its length of travel. To test, slowly push and pull tray assembly, listening and feeling for interference.
5. If binding occurs, clean and lubricate slide rod as required using FMO 200 AW.
6. Perform TOP KNIFE COVER CHECK/ADJUSTMENT.
7. Perform GAUGE PLATE ADJUSTMENT.
8. Verify that index knob does not exhibit backlash, binding, or skipping.
9. Perform INDEX SLIDE MECHANISM ADJUSTMENT.
10. Verify that meat grip slides freely and does not bind on meat grip slide rod.
 - A. If meat grip binds, clean meat grip slide rod and recheck.
 - B. Verify that tips of meat grip do not extend past edge of tray. If adjustment is required, add or remove spacer to meat grip slide rod in front of meat grip.
11. If you have verified that all slicer adjustments are within specifications, but are still having trouble obtaining acceptable slices, observe customer's slicing procedure, then check following.
 - A. All removable slicer parts (top knife cover, fences, etc.) are installed properly.

- B. Number stamped on inside of tray arm matches last three numbers of serial number on slicer.
- C. The product fence should be used to keep product from moving side to side in tray, but should not interfere with product sliding down tray.
- D. Meat grip is in place against back of product.
- E. Slicer table is not wobbling excessively.

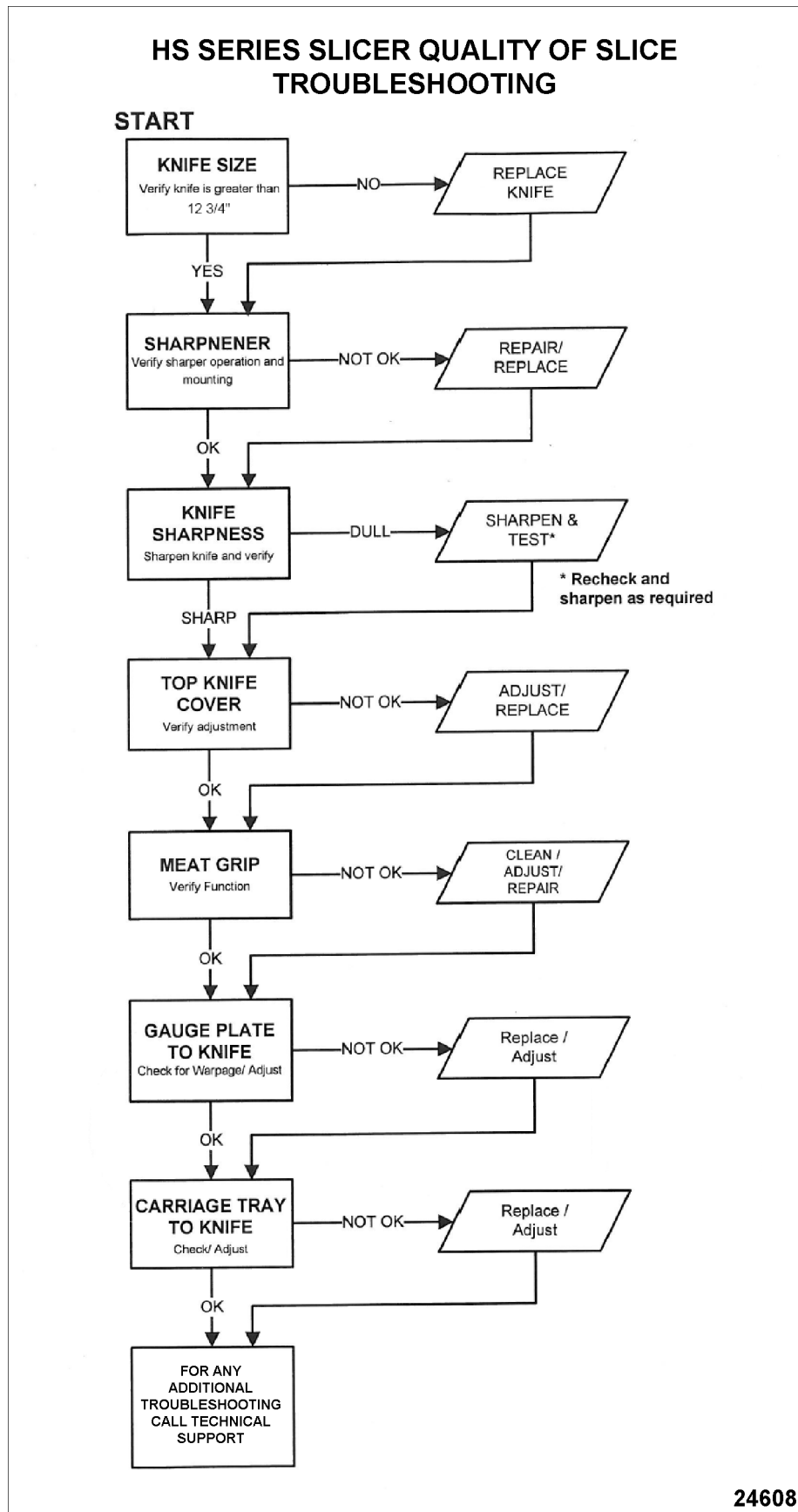


Fig. 124

INDEX SLIDE MECHANISM ADJUSTMENT

⚠ WARNING The slicer knife is very sharp. Exercise extreme caution when working near the knife.

NOTE: The index slide & slide rod must be lubricated with Lubriplate 630AA for the index slide mechanism to operate properly.

NOTE: When the index slide mechanism is properly adjusted, there will be no backlash, binding or skipping in the mechanism throughout its travel. With index knob below 0, check for free play by grasping the gauge plate in the area shown. Attempt to move gauge plate front to back and side to side. There should be no free play in the index slide mechanism. You will experience deflection of the gauge plate depending on the force applied, but there should not be any mechanism free play.

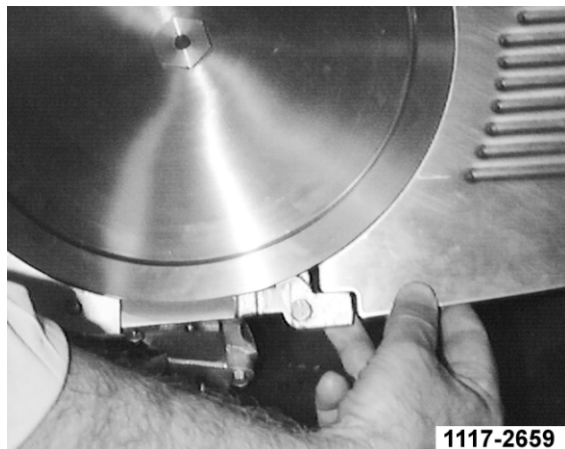


Fig. 125

1. Remove Sharpener - Removal.
2. Remove Carriage Tray Assembly - Removal.
3. Remove BOTTOM COVER.
4. Move transport assembly to expose index slide mechanism (HS8 & HS9 use transport key tool to accomplish this).
5. Loosen the four screws securing interlock stop bracket.
6. Loosen the two index slide rod clamp screws and the anti-rotation rod clamp screw.
7. Turn index knob until the 7/16" dimension shown is present (knife exposed).

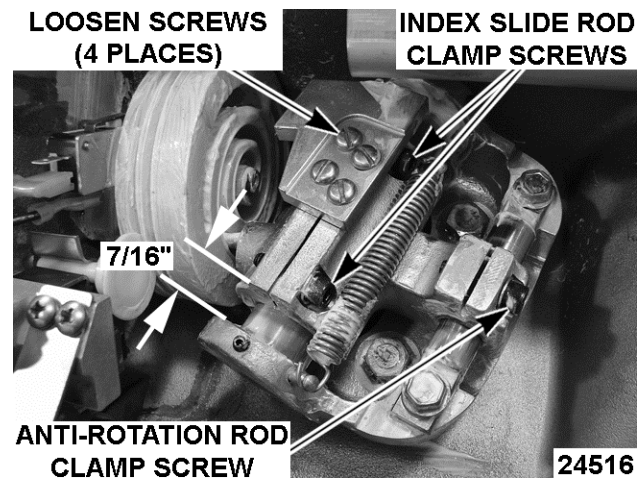


Fig. 126

- A. Tighten one of the index slide rod clamp screws until index slide mechanism will not move.
 - 1) Turn index knob to the point where index mechanism pin is not touching cam groove sides.
- B. Slowly back off clamp screw until you notice movement of slide mechanism. Do not tighten or loosen this screw anymore.
- C. Repeat previous steps for remaining index slide rod clamp screws and anti-rotation rod clamp screws in the same manner.
8. Turn index knob below 0 position.
9. Check index slide mechanism adjustment by turning index knob throughout its travel.
 - A. Index slide mechanism must move freely without backlash, binding or skipping.
 - B. If backlash, binding or skipping is present, repeat adjustment procedure until free movement of index slide mechanism is acquired.
10. Reassemble slicer.
11. Perform GAUGE PLATE ADJUSTMENT.

NOTE: Index knob will have less tension opening gauge plate then closing which is nominal operation.

12. Check slicer for proper operation.

CARRIAGE TRAY INTERLOCK SWITCH 1S TEST (HS8 & HS9)

Operational Check

1. Unplug power cord to slicer.
2. Remove Sharpener - Removal.

3. Remove Carriage Tray Assembly - Removal and insert tray arm interlock key.
4. Remove BOTTOM COVER.
5. Move transport to home position.
6. Fully close gauge plate and remove interlock service tool.
7. Verify cam lock pin drops fully into cam and locks the index knob. If not, check the following:
 - A. See ROLLER BEARING ADJUSTMENT.
 - B. Interlock stop bracket. See INDEX SLIDE MECHANISM ADJUSTMENT.
8. With cam interlock pin fully in cam verify the following:
 - A. Switch actuates (audible sound). If not, perform CARRIAGE TRAY INTERLOCK SWITCH 1S ADJUSTMENT (HS8 & HS9).
 - B. Switch actuator is not deformed when actuated. If so, perform CARRIAGE TRAY INTERLOCK SWITCH 1S ADJUSTMENT (HS8 & HS9).
9. Perform Continuity Test (HS8) or Continuity Test (HS9).

Continuity Test (HS8)

1. Disconnect switch lead wires.
2. Connect meter leads across switch terminals N.C. & COM.
3. With index cam locked, verify meter does not reads continuity.
4. With index cam unlocked (insert interlock service tool) verify meter does read continuity.
5. If not, replace switch and perform CARRIAGE TRAY INTERLOCK SWITCH 1S (HS8 & HS9).
6. If proper operation is still not achieved, perform CONTROL BOARD TEST (HS6 & HS8).
7. If control board OK, check and/or replace wiring harness.

Continuity Test (HS9)

1. Disconnect switch lead wires.
2. Connect meter leads to switch terminals N.O. & COM.
3. With index cam locked verify meter Does read continuity.
4. With index cam unlocked (insert interlock service tool) verify meter does not read continuity.

5. If switch does not test as indicated, replace switch. See CARRIAGE TRAY INTERLOCK SWITCH 1S (HS8 & HS9)
6. Reconnect switch lead wires.
7. Connect meter leads to control board J4-1 & J4-4.
8. With index cam locked verify meter does read continuity.
9. With index cam unlocked (insert interlock service tool) verify meter does not read continuity.
10. If verification is not as indicated, repair or replace wiring harness.
11. If proper slicer operation still cannot be restored, perform CONTROL BOARD TEST (HS6 & HS8)

LED Check (HS9)

NOTE: Board labels are not in numerical order and do not line up with LED's.

1. Plug in power cord to slicer.
2. Move transport to home position.
3. Fully close gauge plate.
4. Remove the interlock service tool to lock cam. LED1 should be illuminated.

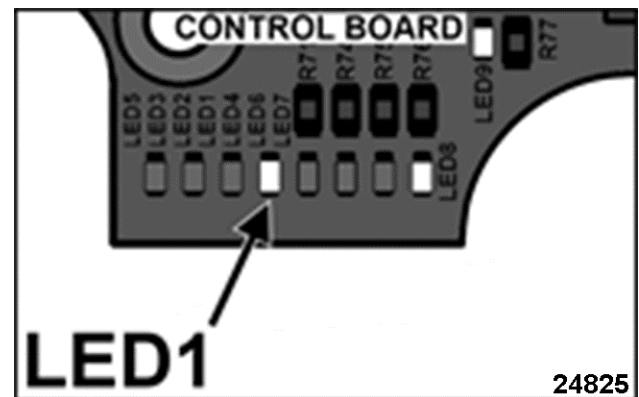


Fig. 127

5. Insert the interlock service tool to unlock cam. LED1 should not be illuminated. If lit, verify the following:
 - A. Wiring connections.
 - B. Proper switch function. See CARRIAGE TRAY INTERLOCK SWITCH 1S TEST (HS8 & HS9).
 - C. Proper switch adjustment. See CARRIAGE TRAY INTERLOCK SWITCH 1S ADJUSTMENT (HS8 & HS9).
 - D. Control board function. See CONTROL BOARD TEST (HS6 & HS8).

6. If LED check passes, reassemble slicer and check for proper operation.

CARRIAGE TRAY INTERLOCK SWITCH 1S ADJUSTMENT (HS8 & HS9)

1. Unplug power cord to slicer.
2. Remove Sharpener - Removal.
3. Remove Carriage Tray Assembly - Removal and insert tray arm interlock key.
4. Remove BOTTOM COVER.
5. Move transport to home position.
6. Fully close gauge plate and remove interlock service tool..
7. Verify cam lock pin drops fully into cam and locks index knob.
8. Loosen two screws securing switch to housing.

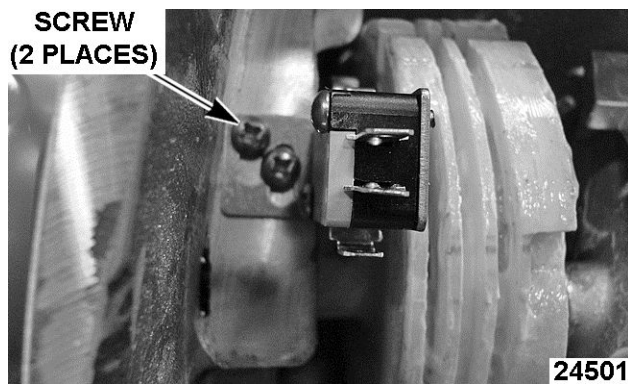


Fig. 128

9. Adjust switch up or down as required and verify the following:
 - A. Switch actuates (audible sound). If not, perform CARRIAGE TRAY INTERLOCK SWITCH 1S ADJUSTMENT (HS8 & HS9).
 - B. Switch actuator is not deformed when actuated. If so, perform CARRIAGE TRAY INTERLOCK SWITCH 1S ADJUSTMENT (HS8 & HS9).
10. If proper adjustment is not possible, look for damaged or bent components and repair/replace as needed.
11. Reassemble the slicer and check for proper operation.

AUTO / MANUAL SWITCH 5S TEST (HS7 & HS9)

Operational Check

1. Remove Sharpener - Removal.
2. Remove Carriage Tray Assembly - Removal and insert tray arm interlock key.
3. Remove BOTTOM COVER.
4. Plug in power cord to slicer
5. Put auto / manual lever in auto position and verify the following:
 - Switch actuates (audible click).
 - Switch actuator is not deformed when actuated.
 - Keypad auto functions illuminated.
6. If verification does not pass, perform AUTO / MANUAL SWITCH 5S ADJUSTMENT (HS7 & HS9).
7. Perform Continuity Test.

Continuity Test

1. Unplug power cord to slicer.
2. Disconnect switch lead wires.
3. Connect meter leads to switch terminals N.O. & COM.
4. With auto/manual lever in manual verify meter does not read continuity.
5. With auto/manual lever in auto verify meter does read continuity.
6. If switch does not test as indicated, replace switch. See AUTO / MANUAL SWITCH 5S (HS7 & HS9).
7. Reconnect switch lead wires.
8. On control board connect meter leads to terminals J4-1 & J4-2.
9. With auto/manual lever in manual verify meter does not read continuity.
10. With auto/manual lever in auto verify meter does read continuity.
11. If verification is not as indicated, repair or replace wiring harness.
12. If proper slicer operation still cannot be restored, perform CONTROL BOARD TEST (HS7 & HS9).

LED Check

NOTE: Board labels are not in numerical order and do not line up with LED's.

1. Plug in power cord to slicer.
2. With auto/manual lever in manual verify LED 4 is not illuminated.

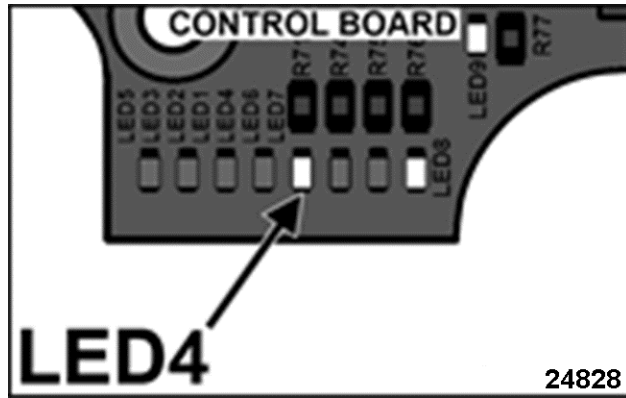


Fig. 129

3. With auto/manual lever in auto verify LED 4 is illuminated.
4. If not, verify following:
 - A. Wiring connections.
 - B. Proper switch function. See AUTO / MANUAL SWITCH 5S TEST (HS7 & HS9).
 - C. Control board function. See CONTROL BOARD TEST (HS7 & HS9).
5. If LED check passes, reassemble slicer and check for proper operation.

AUTO / MANUAL SWITCH 5S ADJUSTMENT (HS7 & HS9)

1. Remove Sharpener - Removal.
2. Remove Carriage Tray Assembly - Removal and insert tray arm interlock key.
3. Remove BOTTOM COVER.
4. Loosen two screws securing switch to mounting bracket.

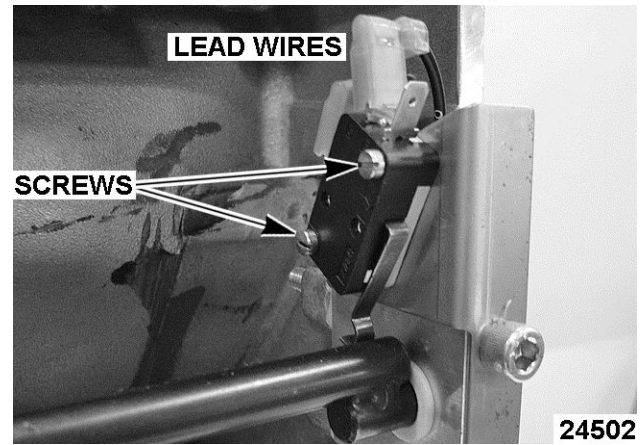


Fig. 130

5. Turn auto/manual lever to auto position until switch is actuated.
6. Adjust switch as required and verify the following:
 - A. Switch actuator is not deformed when actuated.
 - B. Switch actuates (audible click).
7. Tighten screws securing switch to mounting bracket.
8. Actuate auto/manual lever a few times to ensure proper adjustment.
9. Repeat adjustment procedure until proper adjustment is achieved.
10. If proper adjustment is not possible, verify no damage or bent components, repair/replace as required.
11. Reassemble slicer and check for proper operation.

HOME SWITCH 3S TEST (HS7, HS8 & HS9)

Operational Check

1. Plug in power cord to slicer.
2. Remove Sharpener - Removal.
3. Remove Carriage Tray Assembly - Removal and insert tray arm interlock key.
4. Remove BOTTOM COVER.
5. Move transport away from home position and verify slicer knife does not start.
6. Move transport back to home position and verify slicer knife does start. If slicer knife starts, perform HOME SWITCH 3S ADJUSTMENT (HS7, HS8 & HS9).

7. Perform Continuity Test (HS8) or Continuity Test (HS7 & HS9).

Continuity Test (HS8)

1. Unplug power cord to slicer.
2. Disconnect switch lead wires.
3. Connect meter leads across switch terminals.
4. With carriage tray at home position verify meter does read continuity.
5. With carriage tray away from home position verify meter does not read continuity.
6. If switch does not test as indicated, loosen lock nut and adjust reed switch up or down to achieve continuity as indicated above. If continuity cannot be achieved replace switch. See KNIFE RESET SWITCH 4S (HS8 & HS9).
7. If continuity is as specified, perform KNIFE RESET SWITCH 4S ADJUSTMENT (HS8 & HS9).
8. If proper slicer operation still cannot be restored, perform CONTROL BOARD TEST (HS6 & HS8).
9. If control board OK, problem is in wiring harness.

Continuity Test (HS7 & HS9)

1. Unplug power cord to slicer.
2. Disconnect switch lead wires.
3. Connect meter leads to switch terminals.
4. With carriage tray at home position verify meter does read continuity.
5. With carriage tray away from home position verify meter does not read continuity.
6. If switch does not test as indicated, loosen lock nut and adjust reed switch up or down to achieve continuity as indicated above. If continuity cannot be achieved replace switch. See KNIFE RESET SWITCH 4S (HS8 & HS9).
7. Reconnect switch lead wires.
8. Connect meter leads to terminals J4-1 & J4-3.
9. With carriage tray at home position verify meter does read continuity.
10. With carriage tray away from home position verify meter does not read continuity.
11. If verification not as indicated, replace or repair wiring harness.
12. If continuity is as specified, perform KNIFE RESET SWITCH 4S ADJUSTMENT (HS8 & HS9).

13. If proper slicer operation still cannot be restored, perform CONTROL BOARD TEST (HS7 & HS9).

LED Check (HS7 & HS9)

1. Plug in power cord to slicer.
2. Fully close gauge plate.
3. Move transport to home position. LED 2 should be illuminated.

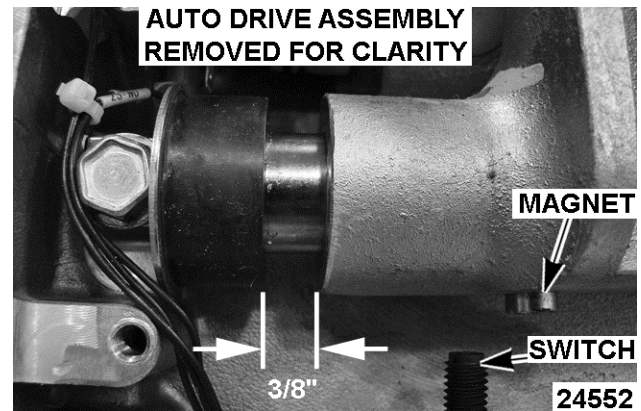


Fig. 131

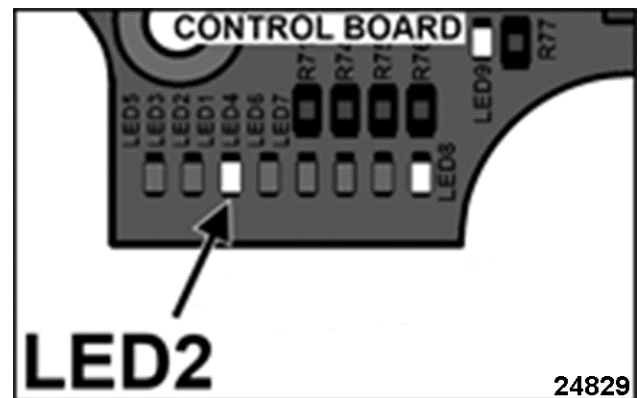


Fig. 132

4. Move transport away from home position. LED 2 should not be illuminated.
5. If switch does not test as indicated, loosen lock nut and adjust reed switch up or down to achieve LED operation as indicated above. If LED operation cannot be achieved, replace switch. See KNIFE RESET SWITCH 4S (HS8 & HS9).
6. If operation is as specified, perform KNIFE RESET SWITCH 4S ADJUSTMENT (HS8 & HS9).

HOME SWITCH 3S ADJUSTMENT (HS7, HS8 & HS9)

⚠ WARNING The slicer will be operating during portions of this check. Make certain that the gauge plate is completely closed anytime the slicer is running.

Power Applied Adjustment (HS7 & HS9)

1. Remove Sharpener - Removal.
2. Remove Carriage Tray Assembly - Removal and insert tray arm interlock key.
3. Remove BOTTOM COVER.
4. Plug in power cord to slicer.
5. Starting with transport at midpoint of stroke, pull transport towards home start position until LED 2 on control board illuminates.

NOTE: Board labels do not line up with LED's and are not in numerical order.

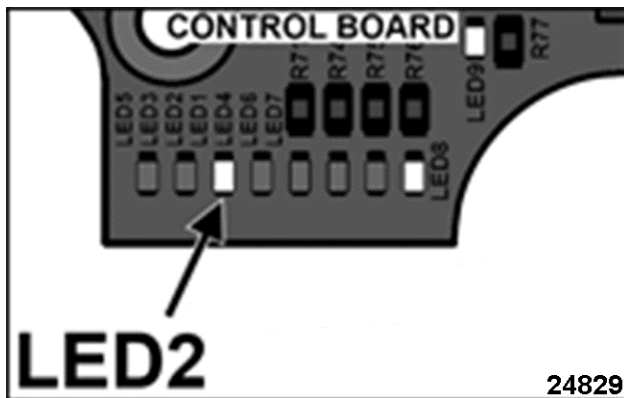


Fig. 133

6. Ensure washer and slide rod bumper are against slide rod mounting screw. Verify dimension from bumper to transport carriage is 3/8" or (10mm).
 - A. If dimension is greater than, loosen locknut and adjust home reed switch downward. Tighten locknut and retest.
 - B. If dimension is less than, loosen locknut and adjust home reed switch upward. Tighten locknut and retest.

NOTE: Do NOT over tighten locknuts. Proper torque is 14 in.-Lbs. Over torque locknuts can result in erratic slicer behavior or damage to reed switch.

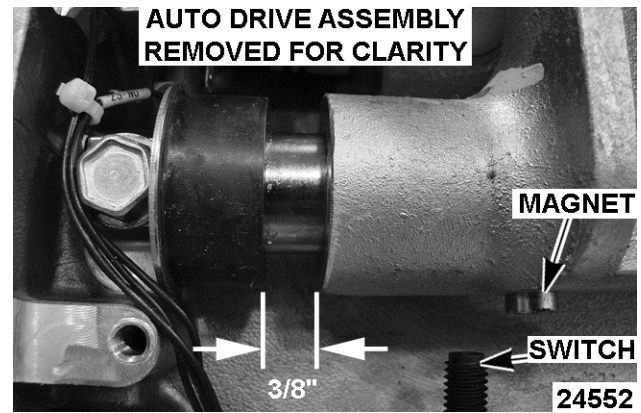


Fig. 134

7. Reassemble slicer and check for proper operation.

Power Not Applied Adjustment (HS7, HS8 & HS9)

1. Remove Sharpener - Removal.
2. Remove Carriage Tray Assembly - Removal and insert tray arm interlock key.
3. Remove BOTTOM COVER.
4. Disconnect home switch lead wires and attach a multi meter to check for continuity.
5. Ensure washer and slide rod bumper are against slide rod mounting screw. Verify dimension from bumper to transport carriage is 3/8" or (10mm).
 - A. If dimension is greater than, loosen locknut and adjust home reed switch downward. Tighten locknut and retest.
 - B. If dimension is less than, loosen locknut and adjust home reed switch upward. Tighten locknut and retest.

NOTE: Do Not over tighten locknuts. Proper torque is 14 in.-Lbs. Over torque locknuts can result in erratic slicer behavior or damage to reed switch.

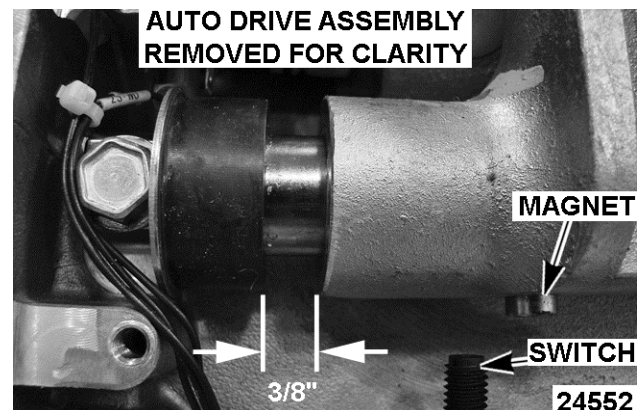


Fig. 135

6. Reassemble slicer and check for proper operation.

KNIFE RESET SWITCH 4S TEST (HS8 & HS9)

Operational Check (HS8 & HS9)

1. Plug power cord in to slicer.
2. Move transport to home position.
3. Turn slicer on.
4. Let slicer run untouched (in home position) for 30 seconds. Verify slicer shuts off after 30 seconds if no movement detected.
5. (HS9) slicer run in Auto or slice continuously in manual.
 - A. Slicer must stay running if transport movement is detected. If not, perform KNIFE RESET SWITCH 4S ADJUSTMENT (HS8 & HS9).
6. Perform Continuity Test (HS8) or Continuity Test (HS9).

Continuity Test (HS8)

1. Unplug power cord to slicer.
2. Remove Sharpener - Removal.
3. Remove CARRIAGE TRAY AND MEAT GRIP ASSEMBLY.
4. Remove BOTTOM COVER.
5. Disconnect switch lead wires.
6. Connect meter leads across switch lead wires.
7. Move transport magnet towards reset switch and verify meter does read continuity.
8. Move transport magnet past the reset switch and verify meter does not read continuity.
 - A. If switch does not test as indicated, loosen lock nut and adjust reed switch up or down to achieve continuity as indicated. If continuity cannot be achieved replace switch. See KNIFE RESET SWITCH 4S (HS8 & HS9).
 - B. If continuity is as specified, perform KNIFE RESET SWITCH 4S ADJUSTMENT (HS8 & HS9).
 - C. If proper slicer operation still cannot be restored, perform CONTROL BOARD TEST (HS6 & HS8).
 - D. If control board tests OK, the problem is in wiring harness.

9. Reassemble slicer and check for proper operation.

Continuity Test (HS9)

1. Unplug power cord to slicer.
2. Remove Sharpener - Removal.
3. Remove Carriage Tray Assembly - Removal.
4. Remove BOTTOM COVER.
5. Disconnect switch lead wires.
6. Connect meter leads across switch lead wires.
7. Move transport magnet towards reset switch and verify meter Does read continuity.
8. Move transport magnet past reset switch and verify meter does not read continuity.
 - A. If switch does not test as indicated, loosen lock nut and adjust reed switch up or down to achieve continuity as indicated. If continuity cannot be achieved replace switch. See KNIFE RESET SWITCH 4S (HS8 & HS9).
9. Reconnect switch lead wires.
10. Connect meter leads to control board terminals J5-1 & J5-2.
11. Move transport magnet towards reset switch and verify meter does read continuity.
12. Move transport magnet past the reset switch and verify meter does not read continuity.
 - A. If test ok, check and/or replace the wiring harness.
13. If continuity is as specified, perform KNIFE RESET SWITCH 4S ADJUSTMENT (HS8 & HS9).
14. If proper slicer operation still cannot be restored, perform CONTROL BOARD TEST (HS7 & HS9).

LED Check (HS9)

NOTE: Board labels are not in numerical order and do not line up with LED's.

1. Plug power cord in to slicer.
2. Fully close gauge plate.
3. Move transport magnet towards reset switch. LED 5 should be illuminated.

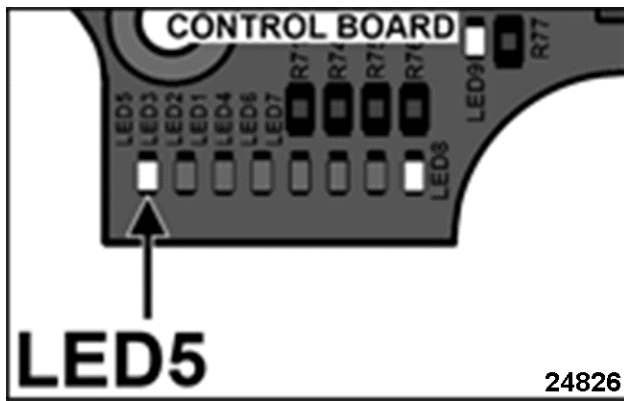


Fig. 136

4. Move transport magnet past reset switch. LED 5 should **not** be illuminated.
5. If switch does not test as indicated, loosen lock nut and adjust reed switch up or down to achieve LED operation as indicated above. If LED operation cannot be achieved, replace the switch. See KNIFE RESET SWITCH 4S (HS8 & HS9).
6. If operation is as specified, perform KNIFE RESET SWITCH 4S ADJUSTMENT (HS8 & HS9).
7. If LED check passes, reassemble slicer and check for proper operation.

KNIFE RESET SWITCH 4S ADJUSTMENT (HS8 & HS9)

⚠ WARNING The slicer will be operating during portions of this check. Make certain that the gauge plate is completely closed anytime the slicer is running.

NOTE: Board labels are not in numerical order and do not line up with LED's.

Power Applied Test (HS9)

1. Remove Sharpener - Removal.
2. Remove Carriage Tray Assembly - Removal and insert interlock service tool.
3. Remove BOTTOM COVER.
4. HS9 slicer only, remove Auto Drive Mechanism - Removal.
5. Plug power cord in to slicer.
6. Verify at least 6 threads of reed switch exposed as shown.

NOTE: Adjustment set at factory.

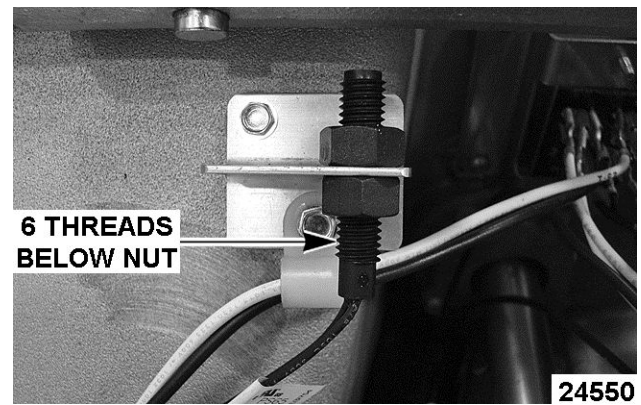


Fig. 137

7. Start with transport at Home Position, push transport towards knife until LED 5 on control board illuminates.

NOTE: If LED 5 never illuminates, loosen locknut and adjust reed switch upward until it does. If this does not produce satisfactory results replace the reed switch. See KNIFE RESET SWITCH 4S (HS8 & HS9).

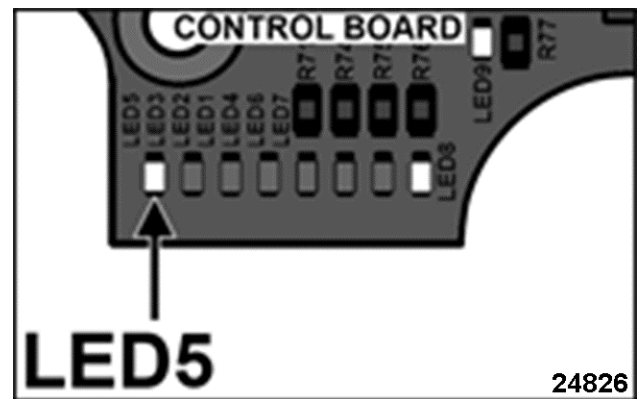
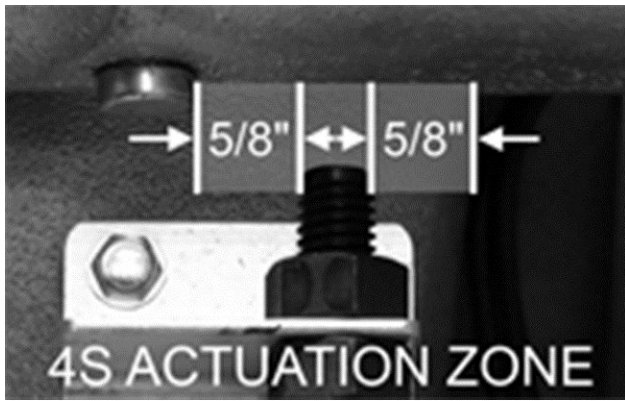


Fig. 138

8. Measure gap between magnet and Reed Switch. Verify dimension from magnet to reed switch is 5/8" or (16mm).
 - A. If dimension is greater than, loosen locknut and adjust reed switch downward. Tighten locknut and retest.
 - B. If dimension is less than, loosen locknut and adjust reed switch upward. Tighten locknut and retest.

NOTE: Do not over tighten locknuts. Proper torque is 14 in.-Lbs. Over torque locknuts can result in erratic slicer behavior or damage to the reed switch.



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Fig. 139

Power Not Applied Test (HS8 & HS9)

1. Remove Sharpener - Removal.
2. Remove Carriage Tray Assembly - Removal and insert interlock service tool.
3. Remove BOTTOM COVER.
4. HS9 slicer only, remove Auto Drive Mechanism - Removal.
5. Plug power cord in to slicer.
6. Verify at least 6 threads of reed switch exposed as shown.

NOTE: Adjustment set at factory.

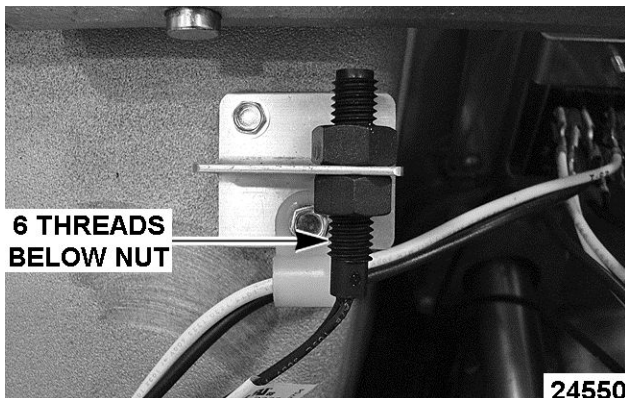


Fig. 140

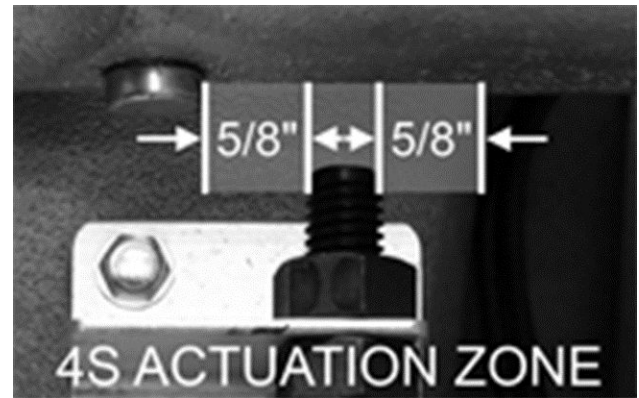
7. Disconnect reed switch lead wires and attach a multi meter and check for continuity.
8. Start with transport at home position; push transport towards knife until meter reads continuity.

NOTE: If continuity is not achievable, loosen locknut and adjust reed switch upward until it does. If this does not produce satisfactory results replace the reed switch. See KNIFE RESET SWITCH 4S (HS8 & HS9).

9. Measure gap between magnet and reed switch. Verify dimension from Magnet to Reed Switch is 5/8" or (16mm).

- A. If dimension is greater than, loosen locknut and adjust reed switch downward. Tighten locknut and retest.
- B. If dimension is less than, loosen locknut and adjust reed switch upward. Tighten locknut and retest.

NOTE: Do Not over tighten locknuts. Proper torque is 14 in.-Lbs. Over torque locknuts can result in erratic slicer behavior or damage to reed switch.



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Fig. 141

GAUGE PLATE CLOSED SWITCH 2S TEST (HS8 & HS9)

NOTE: The HS8 and HS9 have special requirements for correct operation and adjustment of the Gauge Plate Closed Switch. An Operational Check is required anytime the switch is replaced or adjusted. ALL criteria must be correct for proper operation and safety.

Slicer criteria as follows:

- Index knob set to zero.
- Actuator is over cam node.
- Switch actuates (audible click).
- Switch actuator is not deformed when actuated.
- The Gauge Plate must be flush with knife at bottom rib and 0.010" above knife at 3rd rib from top.

Operational Check

1. Unplug power cord to slicer.
2. Remove Sharpener - Removal.

3. Remove Carriage Tray Assembly - Removal and insert tray arm interlock key.
4. Remove BOTTOM COVER.
5. Move transport to home position.
6. Plug in power cord to slicer.
7. Start slicer with gauge plate open at least 10 on the index knob.
 - A. Close gauge plate while slicer is running.
 - B. Verify slicer shuts off.
8. Start slicer with gauge plate closed.
 - A. Open gauge plate at least 10 on the index knob.
 - B. Close gauge plate while slicer is running.
 - C. Verify the slicer shuts off.
9. Repeat above steps 7 thru 8c. Slowly close gauge plate making sure to stop turning index knob the moment slicer shuts off. Verify the following:
 - A. Actuator is over cam node. See GAUGE PLATE CLOSED TO STOP SWITCH 2S ADJUSTMENT (HS8 & HS9).

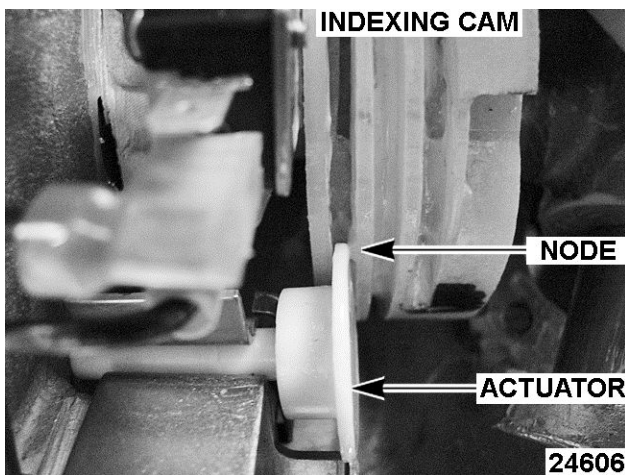


Fig. 142

- B. Switch actuates (audible click). See GAUGE PLATE CLOSED TO STOP SWITCH 2S ADJUSTMENT (HS8 & HS9).
- C. The Switch actuator is not deformed when actuated. See GAUGE PLATE CLOSED TO STOP SWITCH 2S ADJUSTMENT (HS8 & HS9).
- D. Index indicator should be at zero. See GAUGE PLATE ADJUSTMENT.

- E. Gauge plate must be flush with knife at bottom rib and 0.010" above knife at 3rd rib from top. See GAUGE PLATE ADJUSTMENT.

NOTE: If requirements above are true with exception of index knob not on zero, unscrew index knob without upsetting switch and actuator then set index knob to zero. Tighten index knob screw and recheck for proper operation.

10. If operation is not as specified, adjust or repair as required.
11. Perform Continuity Test (HS8) or Continuity Test (HS9).

Continuity Test (HS8)

1. Unplug power cord to slicer.
2. Disconnect switch lead wires.
3. Connect meter leads to switch terminals N.O. & COM.
4. With gauge plate open or with switch un-actuated verify meter does not read continuity.
5. With gauge plate closed or switch actuated verify meter does read continuity.
6. If switch does not test as indicated, replace switch. See GAUGE PLATE CLOSED TO STOP SWITCH 2S (HS8 & HS9).
7. If control board OK, problem is in wiring harness.

NOTE: If operation is as specified, verify all criteria as outlined at beginning of this section are met before returning slicer back into service.

Continuity Test (HS9)

1. Unplug power cord to slicer.
2. Disconnect switch lead wires.
3. Connect meter leads to switch terminals N.O. & COM.
4. With gauge plate open or with switch un-actuated verify meter does not read continuity.
5. With gauge plate closed or switch actuated verify meter does read continuity.
6. If switch does not test as indicated, replace switch. See GAUGE PLATE CLOSED TO STOP SWITCH 2S (HS8 & HS9).
7. Reconnect switch lead wires.
8. Connect meter leads to control board J5-1 & J5-3.
9. With gauge plate open or with switch un-actuated verify meter does not read continuity.

10. With gauge plate closed or switch actuated verify meter does read continuity.
11. If verification is not as indicated, repair or replace wiring harness.
12. If proper slicer operation still cannot be restored, perform CONTROL BOARD TEST (HS7 & HS9).

NOTE: If operation is as specified, verify all criteria as outlined at beginning of this section are met before returning slicer back into service.

LED Check (HS9)

NOTE: Board labels are not in numerical order and do not line up with LED's.

1. Plug in power cord to slicer.
2. Open gauge plate at least 10 on index knob.
3. Close gauge plate. LED 3 should be illuminated.

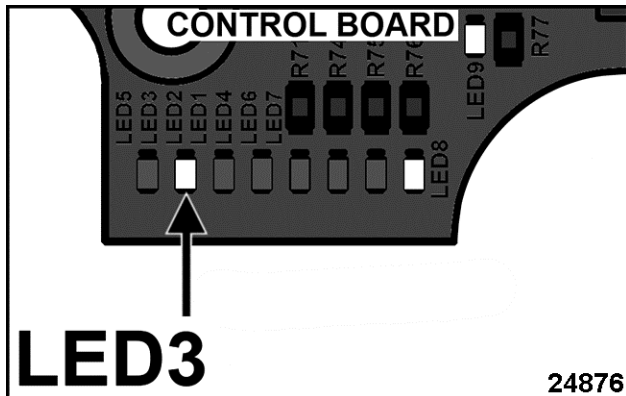


Fig. 143

4. Open gauge plate at least 10 on index knob. LED3 should **not** be illuminated. If not, verify following:
 - A. Wiring connections.
 - B. Proper switch function. See GAUGE PLATE CLOSED SWITCH 2S TEST (HS8 & HS9).
 - C. Proper switch adjustment. See GAUGE PLATE CLOSED SWITCH 2S TEST (HS8 & HS9).
 - D. Control board function. See CONTROL BOARD TEST (HS7 & HS9).
5. LED illumination must occur with following criteria:
 - A. Actuator is over cam node. See GAUGE PLATE CLOSED TO STOP SWITCH 2S ADJUSTMENT (HS8 & HS9).

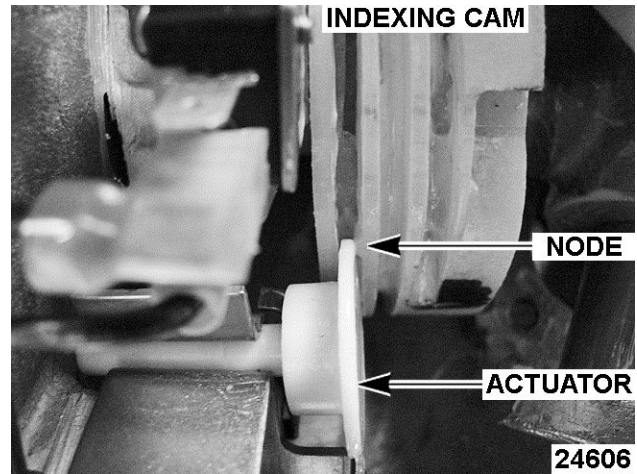


Fig. 144

- B. Switch actuates (audible click). See GAUGE PLATE CLOSED TO STOP SWITCH 2S ADJUSTMENT (HS8 & HS9).
- C. Switch actuator is not deformed when actuated. See GAUGE PLATE CLOSED TO STOP SWITCH 2S ADJUSTMENT (HS8 & HS9).
- D. Index knob indicator should be at zero. See GAUGE PLATE ADJUSTMENT.
- E. Gauge plate must be flush with knife at bottom rib and 0.010" above knife at 3rd rib from top. See GAUGE PLATE ADJUSTMENT.
6. If LED check passes as indicated, reassemble slicer and verify for proper operation.

GAUGE PLATE CLOSED TO STOP SWITCH 2S ADJUSTMENT (HS8 & HS9)

The gauge plate switch is adjusted properly when:

- Index knob is at 0.
 - Index actuator is over cam node.
 - Switch actuator is not deformed when actuated.
 - The gauge plate is flush with knife at bottom rib and 0.010" greater at 3rd rib from top.
1. Remove Sharpener - Removal.
 2. Remove Carriage Tray Assembly - Removal.
 3. Remove BOTTOM COVER.
 4. Loosen 2 screws securing switch bracket to mounting block enough to allow bracket to move.

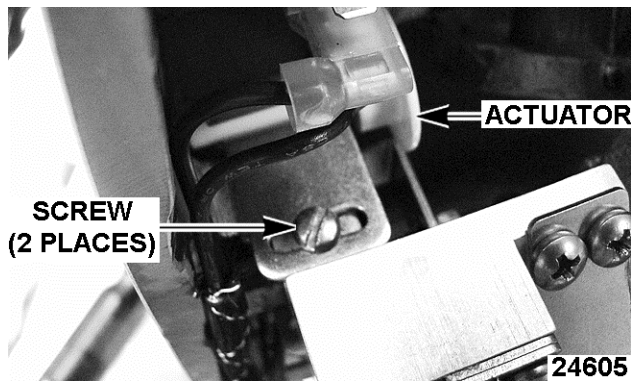


Fig. 145

5. Turn adjusting screw fully CW until there is no more switch bracket travel.

NOTE: Do not bend bracket.

6. Close gauge plate slowly until actuator goes over index cam node.
7. Slowly turn adjusting screw CCW until switch actuator is depressed far enough to close switch. There should be an audible click, and verify following:
 - A. LED illuminates (HS9).
 - B. Switch will have continuity (HS8, HS9).
8. Turn adjusting screw CCW 1/16 turn and temporarily tighten top screw to secure the bracket.
 - A. Open and close gauge plate several times to verify switch actuation consistently occurs when Actuator goes over index cam node.
 - B. If not satisfactory, loosen top screw securing switch bracket and adjust as required.
 - C. If satisfactory, tighten bottom screw.
9. With switch correctly set and actuated, verify index knob is at zero.
 - A. If Index Knob does not read zero, loosen screw at end of index knob without disturbing cam and switch.
 - B. Turn index knob to read zero and retighten screw.
 - C. Open and close gauge plate several times to verify index knob reads zero when actuator goes over index cam node and switch actuates.
10. With index knob set at zero, verify gauge plate adjustments as outlined under GAUGE PLATE ADJUSTMENT.

- A. Gauge plate must be flush with knife at bottom rib and 0.010" greater at 3rd rib from top.

11. Adjust gauge plate as required. See GAUGE PLATE ADJUSTMENT.

GAUGE PLATE ADJUSTMENT

⚠ WARNING The slicer knife is very sharp. Exercise extreme caution when working near the knife.

NOTE: Verify the knife is at least 12-3/4" before making any checks or adjustments to the gauge plate.

Introduction

The gauge plate is properly adjusted when the following are correct:

- Gauge plate warp is 0.010" or less.
- Gauge plate parallelism to knife is within 0.005" to 0.062".
- Gauge plate to knife gap is within 0.015" to 0.046".
- Gauge plate to knife angle is within 0.005" to 0.015" (at bottom rib) and 0.015" to 0.025" (at 3rd rib from top) when fully closed with the 3rd rib from the top measurement 0.010" greater than bottom rib measurement.
- Zero adjust is when index knob is at zero and gauge plate is flush with knife at the bottom rib.

NOTE: After gauge plate is properly adjusted, ensure bolts (#5 & #6) Adjustment Points are tightened and set screws (#1,#2,#3,#4) Adjustment Points torque set to 120 in. lbs.

The gauge plate has an infinite number of possible adjustments, each adjustment potentially affecting the next or the previous adjustments. Understanding the basic mechanical principles involved, can minimize the time required for adjustments.

All gauge plate adjustments can be accomplished by the rules as follows:

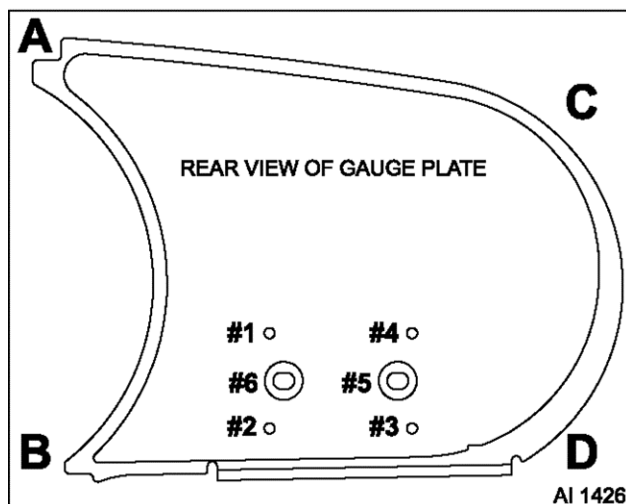
- Never attempt to adjust a set screw (#1,#2,#3,#4) Adjustment Points CW if bolts (#5,#6) Adjustment Points are secured tight.
- Turning one of the set screws (#1,#2,#3,#4) Adjustment Points CW will raise gauge plate corner associated with screw turned, but will lower the opposite corner of gauge plate.

Example: Turning set screw (#1 & #2) Fig. 146CW will have an effect on raising the gauge plate at points (A & B) Fig. 146while lowering gauge plate points © & D) Fig. 146.

- When one or all set screws (#1,#2,#3,#4) Adjustment Points are turned CCW, tighten bolts (#5 & #6) Adjustment Points to secure the gauge plate to gauge plate support after adjustments has been completed.
- Turning one or all of the set screws (#1,#2,#3,#4) Adjustment Points CCW will lower gauge plate corner associated with screw turned, but will raise the opposite corner of gauge plate.

Example: Turning set screw (#2 & #3) Adjustment Points CCW will have an effect on lowering the gauge plate at points (B & D) Adjustment Points while raising gauge plate points (A & C) Adjustment Points.

- To raise or lower all four corners of the gauge plate at once, turn all 4 set screws (#1,#2,#3,#4) Adjustment Points CW (to raise) or CCW (to lower) equally the same in the desired direction.



Adjustment Points

Gauge Plate Factory Default Setting

NOTE: Prior to making any gauge plate adjustments, slide mechanism must be properly adjusted (without free play).

- Remove gauge plate boot to expose adjustment screws.
- Loosen 3 set screws securing gauge plate support to index slide.
 - Lift gauge plate off index slide.
- Remove 2 bolts (#5 & #6) Adjustment Points securing support to gauge plate.

- Adjust all 4 set screws such that 5/32" of treads are exposed (side facing gauge plate).
- Reverse the procedure to install.

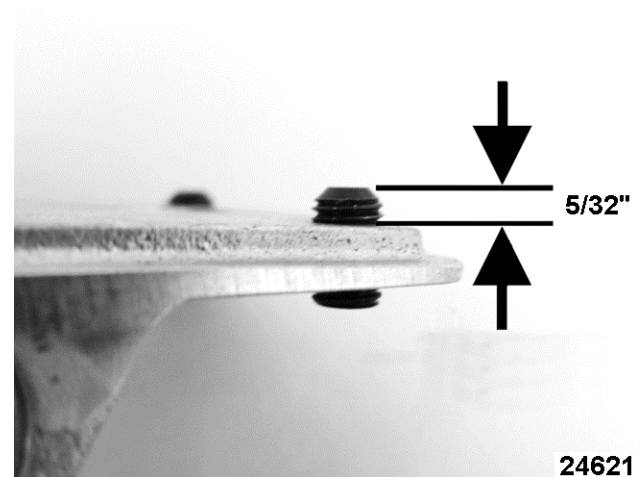


Fig. 147

Gauge Plate Warp Check

- Remove Top Knife Cover - Removal.
- Remove Carriage Tray Assembly - Removal.
- Install interlock service tool to free indexing knob (HS7, HS9 only).
- If gauge plate is warped more than .010" gauge plate must be replaced.
- Use a straight edge across face of gauge plate as shown.
- If not within specification, replace gauge plate.

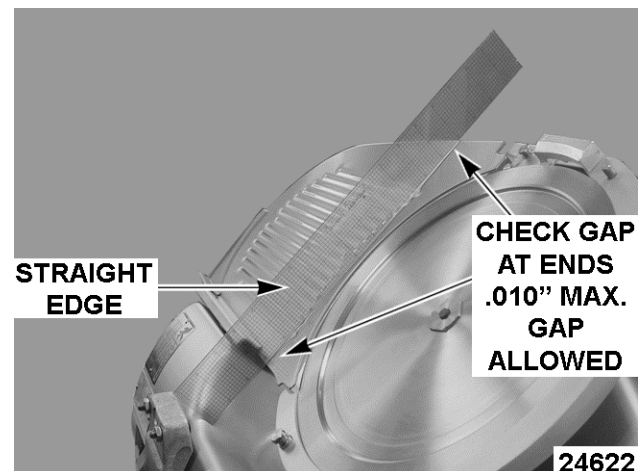


Fig. 148

Gauge Plate Parallelism To Knife - Check

- Remove Top Knife Cover - Removal.
- Open gauge plate slightly.

3. Place straight edge across center of knife contacting knife at 3 O'clock and 9 O'clock positions.
4. Turn indexing knob until gauge plate contacts straight edge next to 9 O'clock position.
5. Check gap at operator end to be within 0.005" to 0.062".

NOTE: Use of 1/16" allen wrench as a feeler gauge. It should drag when checking clearance. If so, parallelism is correct.



Fig. 149

Gauge Plate Parallelism To Knife - Adjustment

1. Verify knife diameter is at least 12-3/4". If not, replace knife.
 2. If gap is greater than 0.062" conduct the following:
 - A. Loosen gauge plate bolts (#5 & #6) Adjustment Points.
 - B. Turn adjustment set screws (#3 & #4) Adjustment Points CW to adjust gap.
- NOTE:** Make small adjustment turn of a 1/4" to set screws and recheck gap.
- C. Tighten gauge plate bolts (#5 & #6) Adjustment Points.
 3. If gap is less than 0.005" conduct the following:
 - A. Turn adjustment set screws (#3 & #4) Adjustment Points CCW to adjust gap.
 - B. Tighten gauge plate bolts (#5 & #6) Adjustment Points.
 4. Recheck parallelism to knife.
 5. Recheck all previous adjustments and adjust as required.

Gauge Plate To Knife Gap - Check

1. Remove Top Knife Cover - Removal.

2. Fully close gauge plate.
3. Verify knife diameter is at least 12-3/4". If not, replace knife.
4. Use feeler gauges to verify gap between knife and gauge plate.
 - A. Verify gap to be within 0.015" to 0.046".

NOTE: Reference for a (Go No Go) check, feeler gauges 0.015" should fit between and 0.046" should not fit between gauge plate and knife.

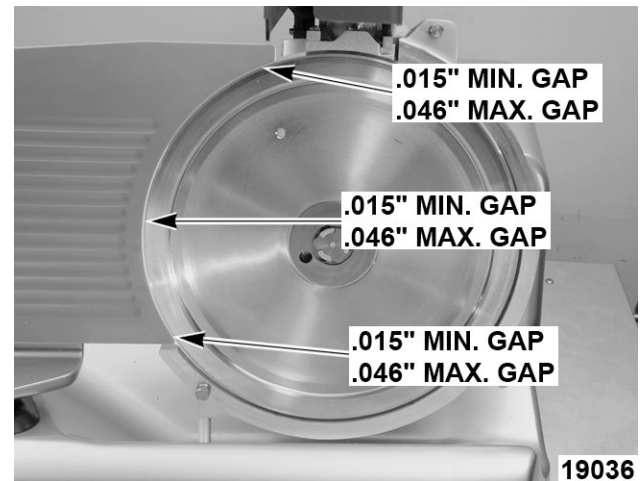


Fig. 150

5. Repeat the process until correct adjustment obtained.

Gauge Plate To Knife Gap - Adjustment

1. Verify knife diameter is at least 12-3/4". If not, replace knife.
2. Open gauge plate slightly.
3. Loosen gauge plate bolts (#5 & #6) Adjustment Points.
4. Use of a rubber mallet to tap gauge plate into position.
5. Tighten gauge plate bolts (#5 & #6) Adjustment Points.
6. Recheck gauge plate to knife gap and adjust as required.
7. Recheck all previous adjustments and adjust as required.

Gauge Plate To Knife Angle - Check

1. Remove Top Knife Cover - Removal.
2. Turn the index knob to raise the gauge plate until bottom rib is flush with the knife.
3. Take measurement from 3rd rib down from top and find height of gauge plate.

4. 3rd rib from top height measurement must be 0.010" greater than bottom rib.
5. If not, adjust the height of the gauge plate by adjustment set screws.

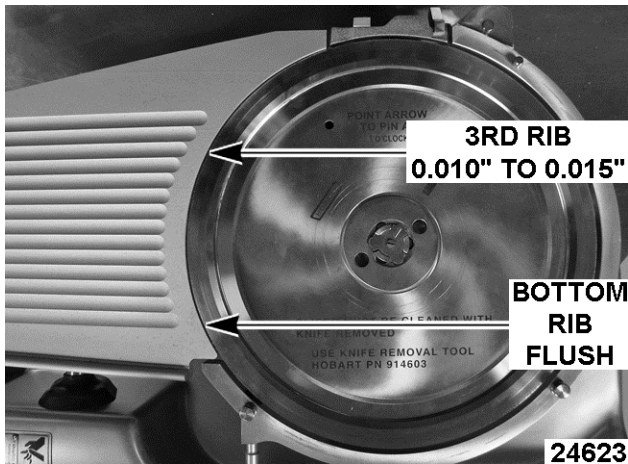


Fig. 151

Gauge Plate To Knife Angle - Adjustment

1. Remove Top Knife Cover - Removal.
2. Verify knife diameter is at least 12-3/4". If not, replace knife.
3. If 3rd rib from top height measurement is greater than 0.010" and greater than bottom rib, conduct the following:
 - A. Loosen gauge plate bolts (#5 & #6) Adjustment Points.
 - B. Turn adjustment set screws (#1 & #4) Adjustment Points CW.

NOTE: Make small adjustment turn of a 1/4" to set screws and recheck gap.

NOTE: The same adjustment can be done by adjusting set screws (#2 & #3) CCW. Refer to rules in Introduction.

- C. Tighten gauge plate bolts (#5 & #6) Adjustment Points.
4. If 3rd rib from top height measurement is greater than 0.010" than bottom rib, conduct the following:
 - A. Turn adjustment set screws (#1 & #4) Adjustment Points CCW to adjust gap.

NOTE: Make small adjustment turn of a 1/4" to set screws and recheck gap.

NOTE: The same adjustment can be done by adjusting set screws (#2 & #3) CW. Refer to rules in Introduction.

- B. Tighten gauge plate bolts (#5 & #6) Adjustment Points.

5. Recheck gauge plate to knife angle.

NOTE: Position gauge plate such that bottom rib is flush before rechecking adjustment.

6. Recheck all previous adjustments and adjust as required.

Zero Adjust - Check

1. Remove Top Knife Cover - Removal.
2. On HS8 & HS9 gauge plate close switch 2S must be adjusted properly. If not, Perform GAUGE PLATE CLOSED TO STOP SWITCH 2S ADJUSTMENT (HS8 & HS9).
3. Turn index knob to zero.

NOTE: On HS8 & HS9 slicers knife must shut off at zero. If not, perform GAUGE PLATE CLOSED TO STOP SWITCH 2S ADJUSTMENT (HS8 & HS9) prior to zero check.

4. Ensure measurement of gauge plate is flush at bottom rib.
5. Fully close the gauge plate.
6. The bottom rib must be 0.005" to 0.015" above knife and 3rd rib from top must be 0.015" to 0.025".
7. If not to specification, adjust as required.

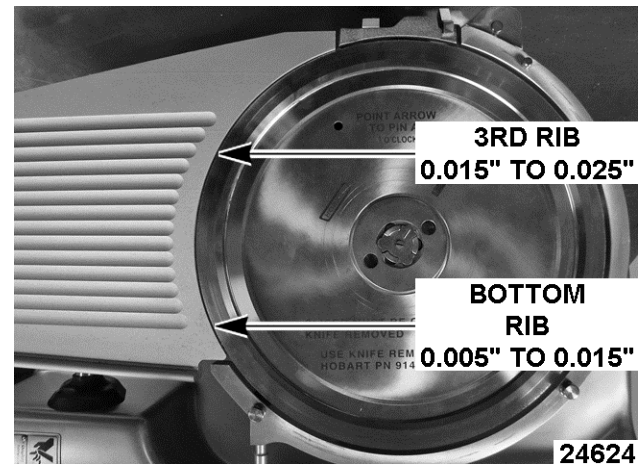


Fig. 152

Zero Adjust - Adjustment

1. Remove Top Knife Cover - Removal.
2. Verify knife diameter is at least 12-3/4". If not, replace knife.

3. Gauge plate close switch 2S must be adjusted properly. If not, Perform GAUGE PLATE CLOSED TO STOP SWITCH 2S ADJUSTMENT (HS8 & HS9).

4. With index knob at zero and If bottom rib is not flush with knife (above knife) conduct the following:

- A. Turn all 4 adjustment set screws Adjustment Points CW to the same amount.

NOTE: Make small adjustment turn of a 1/4" to set screws and recheck.

- B. Tighten gauge plate bolts (#5 & #6) Adjustment Points.

5. With index knob at zero and If bottom rib exposes knife (below knife) conduct the following:

- A. Loosen gauge plate bolts (#5 & #6) Adjustment Points.

- B. Turn all 4 adjustment set screws Adjustment Points CW to the same amount.

NOTE: Make small adjustment turn of a 1/4" to set screws and recheck gap.

- C. Tighten gauge plate bolts (#5 & #6) Adjustment Points.

6. Recheck for proper zero adjustment.

NOTE: Open and close gauge plate a few time before rechecking.

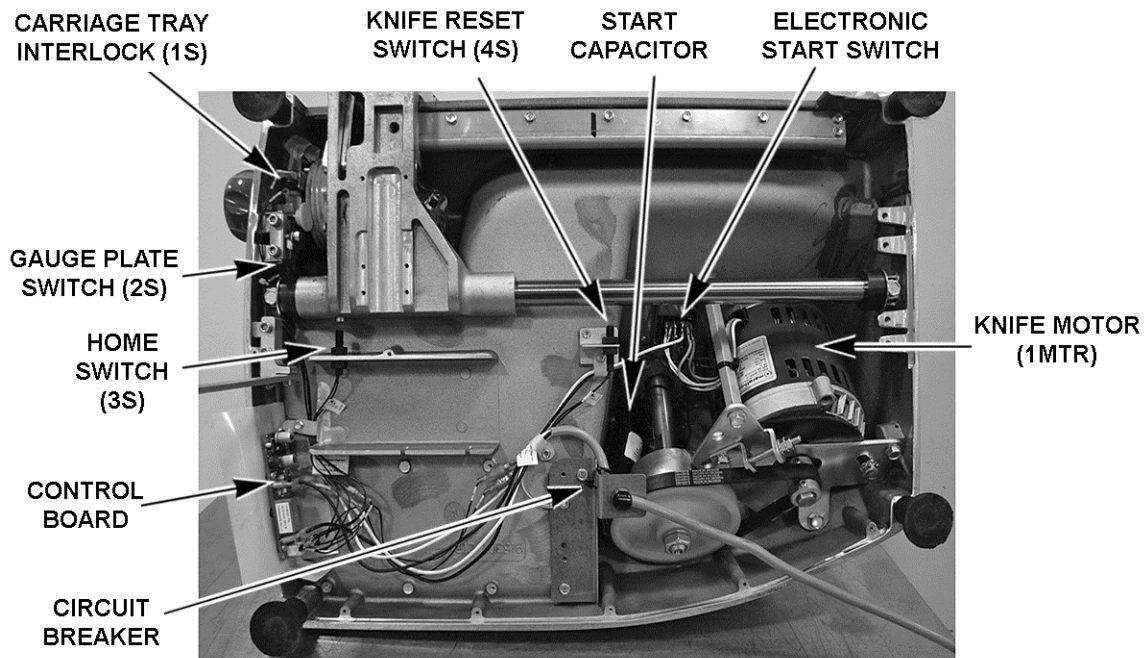
7. Recheck all previous adjustments and adjust as required.

ELECTRICAL OPERATION

COMPONENT FUNCTION

Control Board (HS6, HS8)	Controls power to knife motor. Allows user to turn the slicer ON-OFF.
Carriage Tray Interlock Microswitch (1S) (HS8, HS9)	When carriage tray is removed or unlocked, knife motor will only run while the KNIFE ON button is pressed.
Gauge Plate Closed Microswitch (2S) (HS8, HS9)	Turns off the knife motor if gauge plate position is moved to fully closed (index knob turned fully clockwise).
Home Switch (3S) (HS7, HS8, HS9)	Detects when carriage is in home position. And detects when auto mode has been engaged on model HS9 only.
Knife Reset Switch (4S) (HS8, HS9)	Signals movement of carriage tray to the board during product slicing. If carriage tray is idle for more than 30 seconds, the board removes power from knife motor (1MTR) on models HS8 & HS9; and auto drive motor (2MTR) on HS9 only.
Auto / Manual Microswitch (5S) (HS7, HS9)	Switch position determines slicer operation between automatic or manual mode.
Key Pad (HS7, HS9) ...	User interface for slicer operation through input/output signals to the control board. Allows user to turn the slicer on or off. Set manual or automatic slicing mode, automatic slicing speed and stroke length on model HS9 only.
Control Board (HS7, HS9)	Controls operation of all electrical components.
Auto Drive Motor (2MTR) (HS7, HS9) ...	Drives automatic slicing mechanism.
Knife Motor (1MTR) ...	Turns knife for slicing product.
Electronic Start Switch	Current sensing switch for knife motor. Removes power from start windings when motor reaches operating speed.
Thermal Overload (1CB)	Shuts down slicer if knife motor overheats.
Start Capacitor	Generates a phase verianc on the startwindings that is used to dictae the rotational direction of the motor.

COMPONENT LOCATION

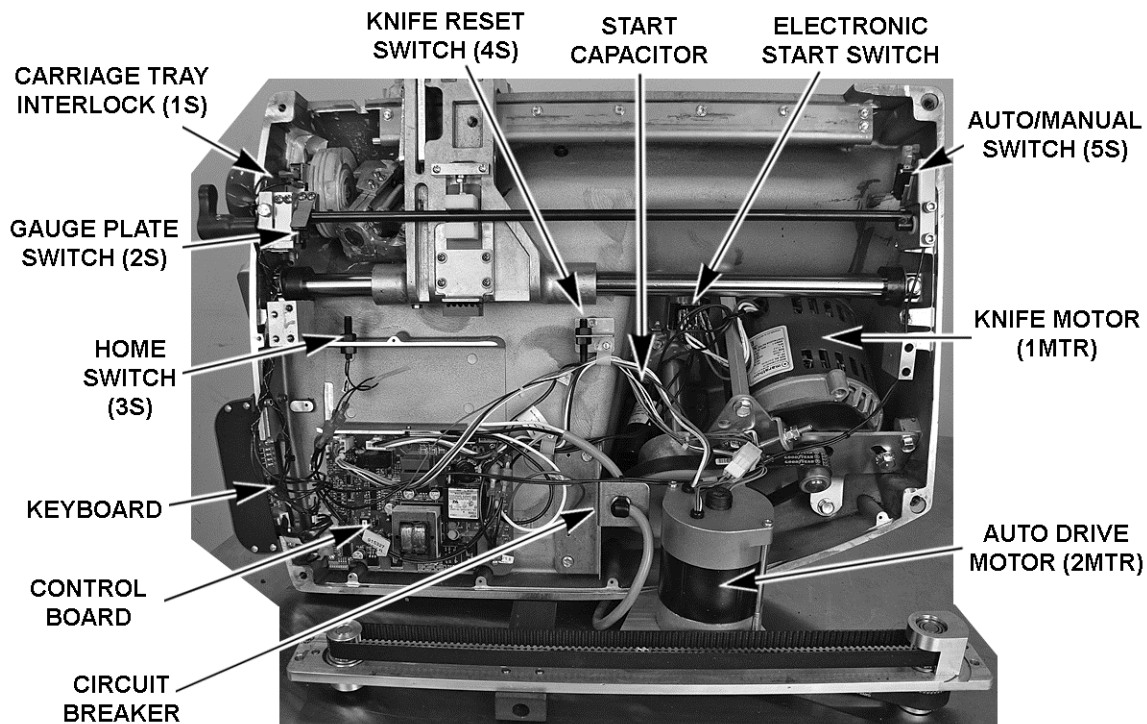


24525

HS8 - MANUAL SLICER WITH INTERLOCKS SHOWN

NOTE: Model HS6 (not pictured) is a fully manual slicer without the Carriage Tray Interlock (1S), Gauge Plate Closed to Stop (2S), Carriage Home (3S) or Knife Reset (4S) switches shown in model HS8 picture above.

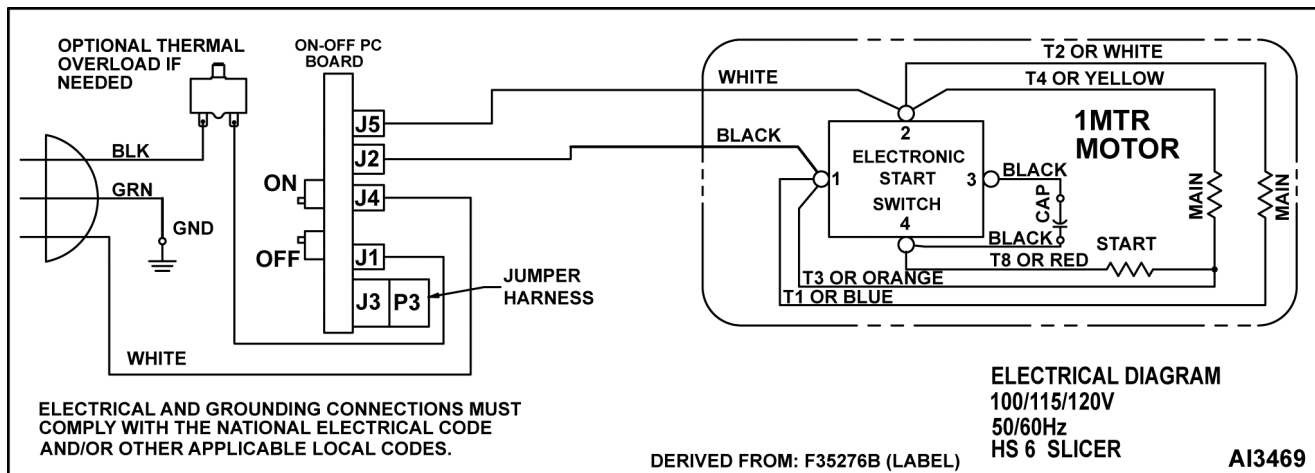
NOTE: Model HS7 (not pictured) is also an auto slicer but without the Carriage Tray Interlock (1S), Gauge Plate Closed to Stop (2S) or Knife Reset (4S) switches shown in model HS9 picture above.



24524

HS9 - AUTO SLICER WITH INTERLOCKS SHOWN

HS6 - ELECTRICAL DIAGRAM & SEQUENCE OF OPERATION



HS6 Diagram

HS6 Sequence Of Operation

NOTE: Knife can be started with carriage in any position.

Start Conditions:

1. Correct voltage supplied to slicer.
2. White power light is lit on keypad.
3. KNIFE ON button flashes white light on keypad.
4. Carriage tray secured.
5. Thermal overload (1CB) is closed.

Manual Sequence:

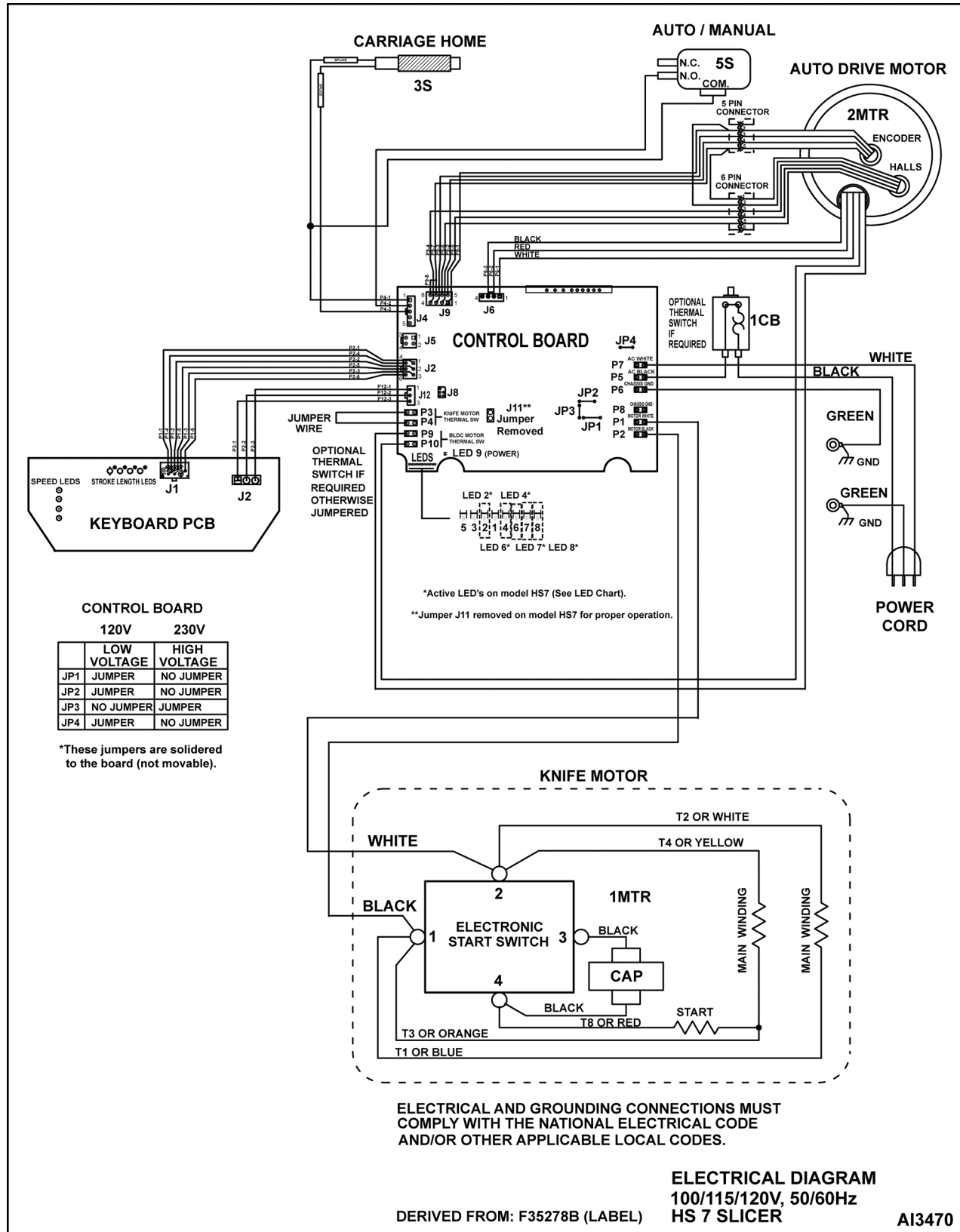
1. Press KNIFE ON button - Control board outputs 12VAC on J2 & J5.
 - A. KNIFE ON button stops flashing.
 - B. 1MTR motor energized and knife turns.
 - C. Motor at operating RPM. Electronic start switch removes power from start windings and capacitor.

LED CHART - HS7			
LED Order is same as on control board (L-R)	Switch No.	Switch Condition for LED to Turn ON	Slicer Condition for LED to Activate
4	5S (N.O.)	Auto/ Manual microswitch closed	Auto/manual lever is in Auto position
9	NA	AC power on	Power applied to control board

NOTE: LED's 5, 3, 1, (in order L-R on the board) are not utilized on this model.

ERROR CODE CHART (HS7, HS9)		
No. of Flashes	Problem	Probable Cause
NOTE: Error codes are designated by the number of times the white power on light on the keyboard flashes. To reset, push the OFF button on the keyboard.		
1	Control board over temperature	Control board malfunction.
2	Auto motor excessive current detected	Auto motor malfunction, short circuit, binding in auto mechanism.
3	Knife motor over temperature	P3 - P4 jumper malfunction, control board malfunction.
4	Auto motor internal hall effect malfunction	Auto motor malfunction.
5	Auto motor internal hall effect transition malfunction	Auto motor malfunction.
6	Encoder input not active	Auto motor malfunction.
7	Unable to find home, Ran too far looking for home.	N/A
8	Carriage moving too fast or slow	Binding in auto mechanism, auto motor malfunction, control board malfunction.
9	Clutch disengaged while running	5S auto manual switch malfunction, auto/manual mechanism.
10	Transport lock engaged while running	1S carriage tray interlock switch malfunction.
11	Auto motor over temperature	P9 - P10 jumper malfunction, control board malfunction.
12	Slicer failed to enter the On state	J2 harness malfunction, keypad malfunction, control board malfunction.

HS7 - ELECTRICAL DIAGRAM, SWITCH CHART & SEQUENCE OF OPERATION



HS7 Wiring Diagram

HS7 Switch Chart		
Switch No.	Name / Function	Switch State (inoperated)
3S	Carriage home - reed switch	N.O.
5S	Auto / Manual - microswitch	N.O.

HS7 Sequence Of Operation

Start Conditions:

1. Correct voltage supplied to slicer.
2. Control board powered LED 9 on control board lit.
3. Keypad is powered.
 - A. White power light on keyboard is lit.
 - B. Knife ON button flashes green light on keyboard if carriage is in home position. If carriage is not at home position, light is off.
 - C. Slowest speed indicator light is on (if auto mode is selected).
4. Carriage tray secured on transport.
5. Thermal overload (1CB) is closed.
6. Carriage in home position, carriage reed switch (3S) N.O. is inactivated LED 2 on the control board lit.
7. Auto / Manual microswitch (5S) is inactivated for manual slicer operation as outlined below. If Auto mode is selected, refer to Auto Sequence in this section.

NOTE: Knife can only be started with carriage tray in home position.

Manual Sequence:

1. Press KNIFE ON - PAUSE button – Ground signal output from keypad.
 - A. Knife ON - PAUSE button light stays ON.
 - B. Supply voltage output from P1 & P2 on control board to 1MTR knife motor.
2. 1MTR motor energized.
 - A. Motor at operating RPM. Electronic start switch removes power from start windings and capacitor.
 - B. Knife turns.
3. Open gauge plate to desired slicing thickness. Move carriage back and forth to begin slicing product. Return carriage to home position when slicing is complete.

4. 1MTR Motor runs until one of the following conditions is met:
 - A. OFF button is pressed - Output removed from control board. KNIFE ON - PAUSE button light returns to flashing. If in home position and KNIFE ON - PAUSE button is pressed - Output removed from control board. KNIFE ON button returns to flashing light if carriage is at home position; or light remains off if carriage not at home.
 - B. KNIFE ON - PAUSE button is pressed - Output removed from control board. KNIFE ON button returns to flashing light if carriage is at home position; or light remains off if carriage not at home.
5. Output voltage from P1 & P2 on control board removed from 1MTR knife motor.
 - A. Motor de-energized and knife stops.

NOTE: Knife can only be started with carriage tray in home position.

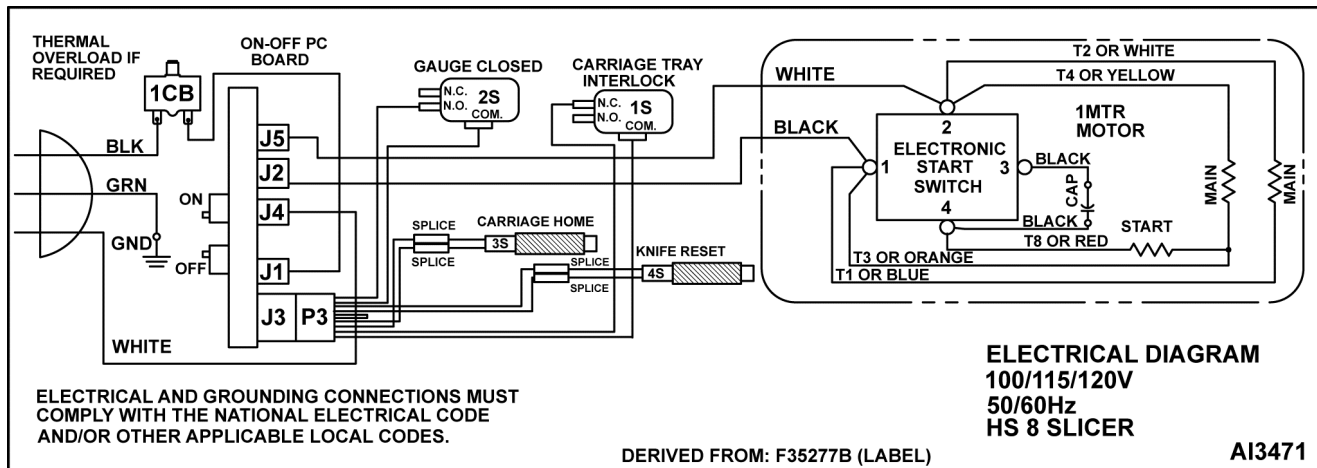
Auto Sequence:

1. Turn Auto / Manual lever to Auto.
 - A. Auto / manual microswitch (5S) is operated. With switch actuated, the input signal is applied to control board indicating auto mode selected.
 - 1) All stroke length lights are lit on the keyboard PCB. Indicates the longest stroke length is selected (default).
 - 2) Single speed light is lit on the keyboard. Indicates the slowest knife speed is selected (default).
 - 3) LED 4 on control board is lit.
 - 4) Belt engaged on 2 MTR Auto Drive Motor.

NOTE: Speed and stroke can be changed at any time during slicer operation. However, slicer will remember last settings unless power has been removed from the slicer.

2. Select desired stroke length and speed as necessary. The number of lights lit on keyboard indicate stroke length (shortest, medium, longest) and speed selection (slowest, med1, med2 highest).
3. Open gauge plate to desired slicing thickness.
4. Press KNIFE ON - PAUSE button – Ground signal output from keypad.
 - A. KNIFE ON - PAUSE button light stays ON (solid).
 - B. Supply voltage output from P1 & P2 on control board to 1MTR knife motor.
5. 1MTR knife motor energized and knife turns.
 - A. Motor at operating RPM. Electronic start switch removes power from start windings.
6. 2MTR auto drive motor energized.
 - A. Carriage moves back and forth at selected speed and stroke to slice product.
7. 1MTR knife motor and 2MTR auto drive motor run until one of the following conditions is met:
 - A. OFF button is pressed. Slicer immediately shuts down.
 - B. KNIFE ON - PAUSE button is pressed – Slicer placed in pause mode. KNIFE ON button light turns off temporarily until transport returns to home.
 - 1) Control board removes P1 & P2 output from 1MTR knife motor. Motor de-energized and knife stops.
 - 2) Control board removes power from 2MTR auto drive motor. Motor de-energized and carriage remains at current position.
 - 3) Keypad and control board lights are off.
 - C. Auto / manual lever returned to manual position.
 - 1) 2MTR returns carriage to home position and stops.
 - 2) Power removed from 1MTR knife motor.
 - 3) KNIFE ON button returns to flashing light with carriage at home position.

HS8 - ELECTRICAL DIAGRAM, SWITCH CHART & SEQUENCE OF OPERATION



HS8 Wiring Diagram

HS8 Switch Chart		
Switch No.	Name / Function	Switch State (unoperated)
1S	Carriage tray interlock - microswitch	N.C.
2S	Gauge plate closed to stop - microswitch	N.O.
3S	Carriage home - reed switch	N.O.
4S	Knife reset (or cut-through) - reed switch	N.O.

HS8 Sequence Of Operation

Start Conditions:

1. Correct voltage supplied to slicer.
2. White power light is lit on keypad.
3. KNIFE ON button flashes white light on keypad (if carriage is in home position).
4. Carriage tray secured on transport.
5. Thermal overload (1CB) is closed.
6. Carriage is unlocked, interlock microswitch (1S) is inactive.
7. Gauge plate microswitch (2S) un-actuated (gauge plate set to desired slicing thickness).
8. Carriage in home position, carriage reed switch (3S) actuated.
9. Knife reset (cut-through) reed switch (4S) unactuated.

Notes:

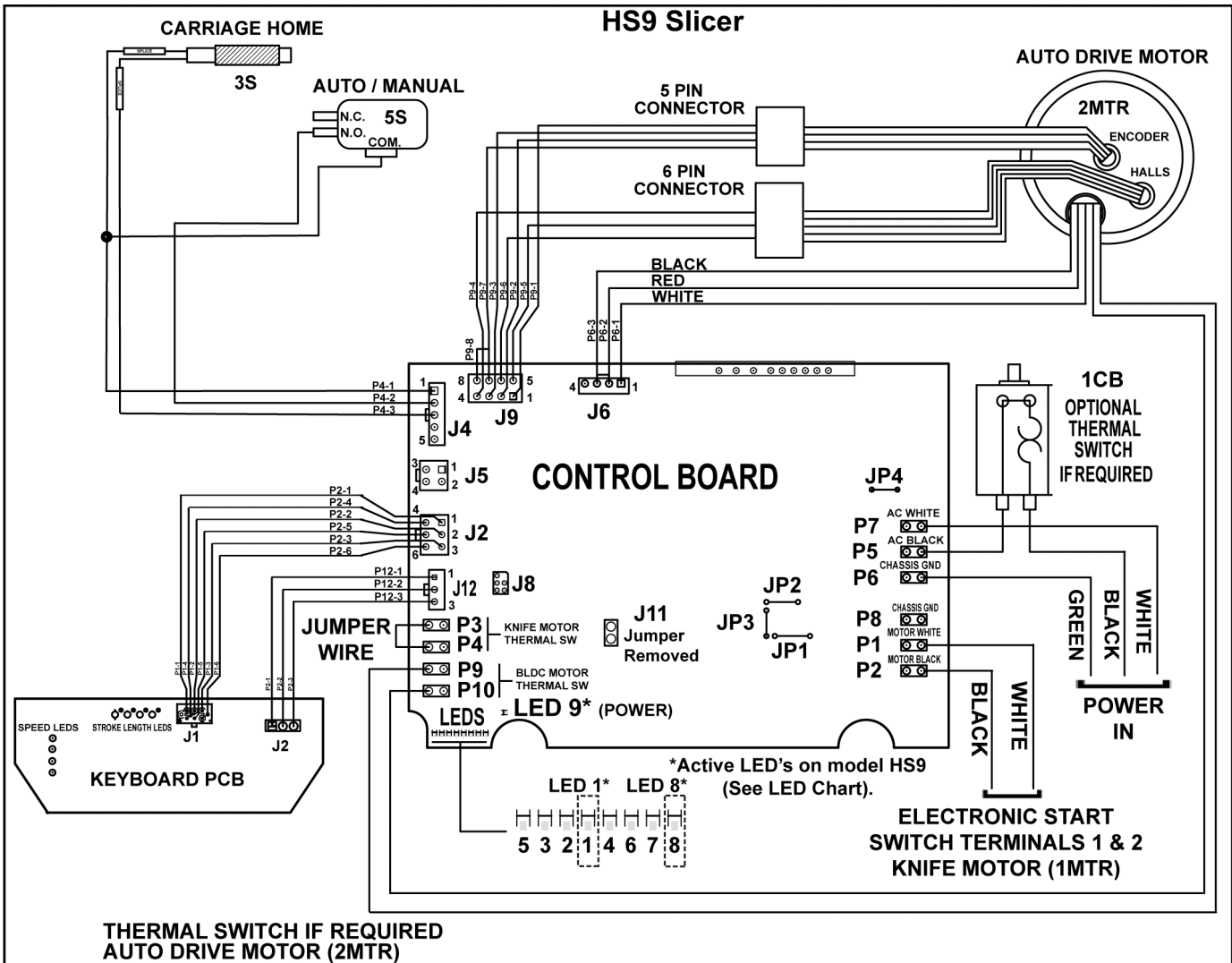
1. Knife can only be started with carriage tray in home position.
2. Knife will start with gauge plate open or closed, but closing gauge plate when running will shut off the knife.
3. With carriage tray removed or transport locked, knife will only run while KNIFE ON button is held.

Manual Sequence:

1. Press KNIFE ON button - Control board outputs 120VAC on J2 & J5.
 - A. KNIFE ON button light stays ON.
 - B. 1MTR motor energized and knife turns.

- C. Motor at operating RPM. Electronic start switch removes power from start windings.
2. Open gauge plate to desired slicing thickness. Move carriage back and forth to begin slicing product.
3. As carriage magnet passes over knife reset reed switch (4S), the ON-OFF PC board receives the knife reset signal from reed switch (4S) to reset the timer circuitry on the board. If carriage idle time exceeds 30 seconds, time expires and the board removes power from motor.
4. Motor runs until one of the following conditions is met:
 - A. OFF button is pressed - Control board removes output from J2 & J5. KNIFE ON button light turns off. KNIFE ON button returns to flashing white light if carriage is at home position.
 - B. KNIFE ON button is pressed - Output removed from ON-OFF PC board. KNIFE ON button returns to flashing white light if carriage is at home position.
 - C. Carriage tray is idle for more than 30 seconds. The control board must receive the knife reset signal from the reed switch (4S) to reset the timer circuitry clock on the board. If time expires, the board removes power from the motor.
 - D. Gauge plate is closed (actuates gauge closed microswitch 2S).
5. Motor de-energized and knife stops.

HS9 - CONTROL BOARD, LED & ERROR CODE CHARTS



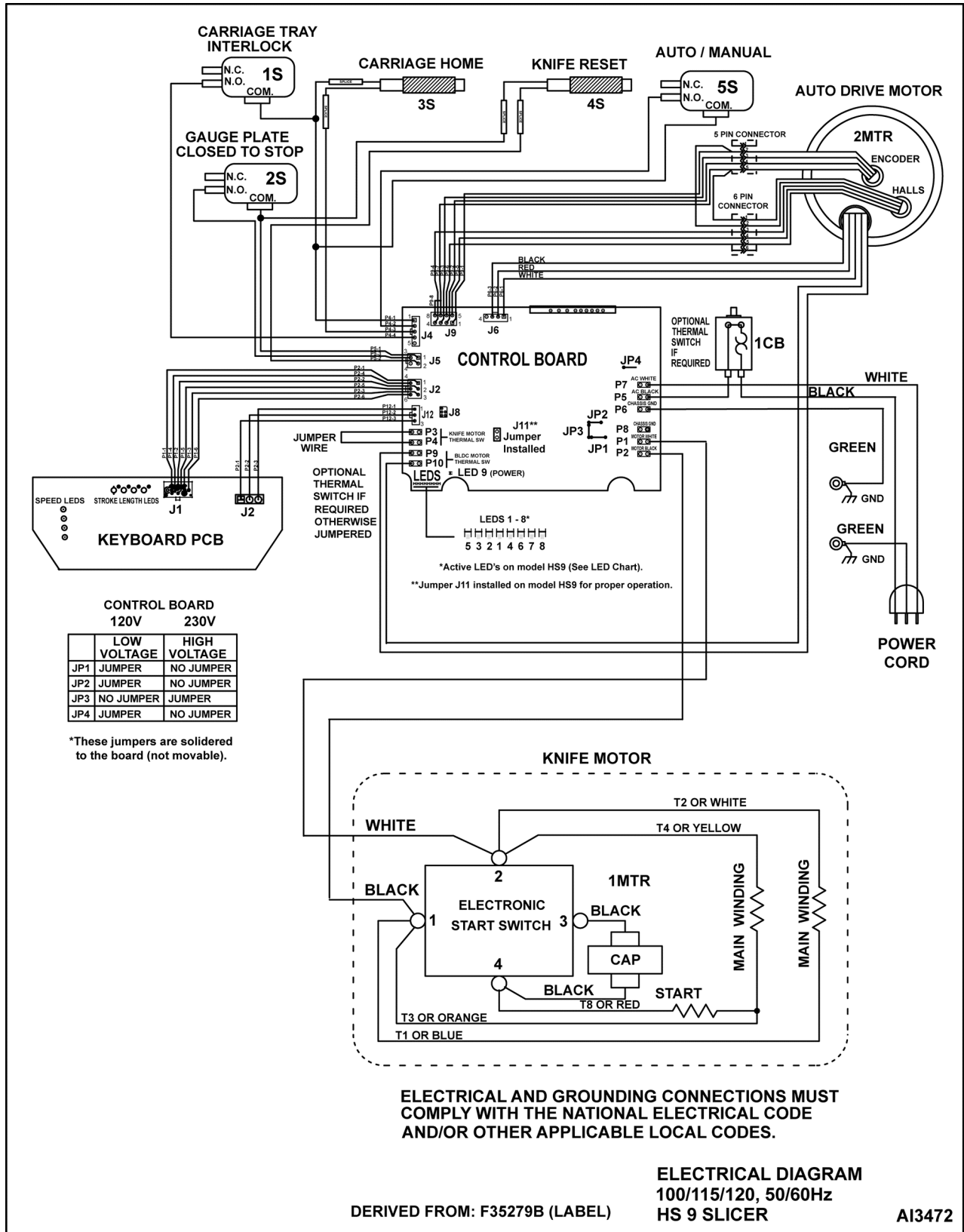
HS9 Control Board

LED CHART - HS9			
LED Order is same as on control board (L-R)	Switch No.	Switch Condition for LED to Turn ON	Slicer Condition for LED to Activate
5	4S (N.O.)	Cut through sensor reed switch closed	Carriage magnet passes over reed switch
3	2S (N.O.)	Close to stop microswitch closed	Gauge plate is fully closed
2	3S (N.O.)	Home sensor reed switch closed	Carriage in the home position

LED CHART - HS9			
LED Order is same as on control board (L-R)	Switch No.	Switch Condition for LED to Turn ON	Slicer Condition for LED to Activate
1	1S (N.O.)	Carriage tray interlock microswitch closed	Carriage tray is removed from slicer
4	5S (N.O.)	Auto/ Manual microswitch closed	Auto/manual lever is in Auto position
6	—	Auto dive motor hall effect switch activated	DC auto drive motor rotates to activate
7	—	Auto dive motor hall effect switch activated	DC auto drive motor rotates to activate
8	—	Auto dive motor hall effect switch activated	DC auto drive motor rotates to activate
9	—	AC power on	Power applied to control board

See ERROR CODE CHART (HS7, HS9)

HS9 - ELECTRICAL DIAGRAM, SWITCH CHART & SEQUENCE OF OPERATION



HS9 Wiring Diagram

HS9 Switch Chart		
Switch No.	Name / Function	Switch State (unoperated)
1S	Carriage tray interlock - microswitch	N.O.
2S	Gauge plate closed to stop - microswitch	N.O.
3S	Carriage home - reed switch	N.O.
4S	Knife reset (or cut-through) - reed switch	N.O.
5S	Auto / Manual - microswitch	N.O.

HS9 Sequence Of Operation

Start Conditions:

- Correct voltage supplied to slicer.
- Control board powered with LED 9 on control board is lit.
- Keyboard PCB is powered.
 - White power light on keyboard is lit.
 - Knife ON button flashes green light on keyboard if carriage is in home position. If carriage is not at home position, light is off.
 - Slowest speed indicator light is on (if auto mode is selected).
- Carriage tray secured on transport.
- Thermal overload (1CB) is closed.
- Carriage is unlocked, interlock microswitch (1S) is unactuated.
- Carriage in home position, carriage reed switch (3S) is actuated and LED 2 on the control board is lit.
- Knife reset (cut-through) reed switch (4S) is unactuated
- Auto / Manual microswitch (5S) is unactuated for manual slicer operation as outlined below. If Auto mode is selected, refer to Auto Sequence in this section.

Notes: Manual Sequence

- Knife can only be started with carriage tray in home position.
- Knife will start with gauge plate open or closed, but closing gauge plate when running will shut off the knife.
- With carriage tray removed or transport locked, knife will only run while KNIFE ON – PAUSE button is held.

Manual Sequence:

- Press KNIFE ON - PAUSE button – ground signal output from keypad.
 - Knife ON - PAUSE button light stays ON.
 - Supply voltage output from P1 & P2 on control board to 1MTR knife motor.
- 1MTR motor energized.
 - Motor at operating RPM. Electronic start switch removes power from start windings and capacitor.
 - Knife turns.
- Open gauge plate to desired slicing thickness. Move carriage back and forth to begin slicing product. Return carriage to home position when slicing is complete.
- LED 5 on control board cycles ON/OFF as carriage magnet passes over knife reset reed switch (4S).
- 1MTR Motor runs until one of the following conditions is met:
 - OFF button is pressed - Output removed from control board. KNIFE ON button returns to flashing light if carriage is at home position; or light remains off if carriage not at home.
 - KNIFE ON - PAUSE button is pressed - Output removed from control board. KNIFE ON button returns to flashing light if carriage is at home position; or light remains off if carriage not at home.
 - Carriage tray is idle for more than 30 seconds. The control board must receive the knife reset signal from the reed switch (4S) to reset the timer circuitry on the board. If time expires, the board removes power from the motor.
 - Gauge plate is closed, gauge closed switch 2S is actuated and LED 3 on control board is lit (as long as switch 2S remains operated).

6. Output voltage from P1 & P2 on control board removed from 1MTR knife motor.

A. Motor de-energized and knife stops.

Notes: Auto Sequence

1. Knife can only be started with carriage tray in home position.
2. Knife will start with gauge plate open or closed, but closing gauge plate when running will shut off the knife motor and auto drive motor in auto mode.
3. With carriage tray removed or transport locked, knife will only run while KNIFE ON – PAUSE button is held.

Auto Sequence:

1. Turn Auto / Manual lever to Auto.
 - A. Auto / manual microswitch (5S) is actuated. With switch actuated, the input signal is applied from board indicating auto mode selected.
 - 1) All stroke length lights are lit on the keyboard PCB. Indicates the longest stroke length is selected (default).
 - 2) Single speed light is lit on the keyboard. Indicates the slowest knife speed is selected (default).
 - 3) LED 4 on control board is lit.
 - 4) Belt engaged on 2 MTR Auto Drive Motor.

NOTE: Speed and stroke can be changed at any time during slicer operation. However, slicer will remember last settings unless power has been removed from the slicer.

2. Select desired stroke length and speed as necessary. The number of lights lit on keyboard indicate stroke length (shortest, medium, longest) and speed selection (slowest, med1, med2 highest).
3. Open gauge plate to desired slicing thickness.
4. Press KNIFE ON - PAUSE button – ground signal output from keypad.
 - A. KNIFE ON - PAUSE button light stays ON (solid).
 - B. Supply voltage output from P1 & P2 on control board to 1MTR knife motor.
5. 1MTR knife motor energized.
 - A. Motor at operating RPM. Electronic start switch removes power from start windings.

B. Knife turns.

6. 2MTR auto drive motor energized.

A. Carriage moves back and forth at selected speed and stroke to slice product.

B. LED 5 on control board turns on momentarily as carriage magnet passes over knife reset reed switch (4S) to close it. As carriage magnet moves away from reed switch (4S), the reed switch opens and LED 5 turns off. This condition repeats as long as slicer is operating.

7. 1MTR knife motor and 2MTR auto drive motor run until one of the following conditions is met:

- A. OFF button is pressed. Slicer immediately shuts down.
 - 1) Control board removes P1 & P2 output from 1MTR knife motor. Motor de-energized and knife stops.
 - 2) Control board removes power from 2MTR auto drive motor. Motor de-energized and carriage remains at current position.
 - 3) auto control keypad lights are all off.
- B. KNIFE ON - PAUSE button is pressed – Slicer placed in pause mode. KNIFE ON button light turns off temporarily until transport returns home.
 - 1) 2MTR returns carriage to home position and stops.
 - 2) Power removed from 1MTR knife motor.
 - 3) KNIFE ON button returns to flashing light with carriage at home position.
- C. Carriage is idle for more than 30 seconds (if there is a fault in the belt drive system). The control board must receive the knife reset signal from the reed switch (4S) to reset the timer circuitry on the board. If time expires, the board removes power from motor.
- D. Gauge plate is closed (gauge closed switch 2S is actuated and LED 3 on control board is lit as long as switch is operated).
- E. Auto / manual lever returned to manual position.

TROUBLESHOOTING

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SYMPTOM	POSSIBLE CAUSE
Knife motor (1MTR) will not start.	<ol style="list-style-type: none"> 1. No power to slicer. 2. Thermal overload (1CB) open. 3. Carriage tray assembly not in home start position (except HS6). 4. 3S home switch malfunction or out of adjustment (except HS6). 5. Electronic start switch malfunction. 6. Start capacitor malfunction. 7. Keypad malfunction (HS7 & HS9). 8. Control board malfunction. 9. Knife motor malfunction.
Knife motor shuts off during use.	<ol style="list-style-type: none"> 1. Thermal overload (1CB) open. 2. Slicer being overloaded. 3. 2S gauge plate switch out of adjustment or malfunction (HS8 & HS9). 4. 4S knife reset switch (HS8 & HS9). 5. J12 harness (HS7 & HS9). 6. Knife motor malfunction.
Slicer will not shut off.	<ol style="list-style-type: none"> 1. Keypad malfunction (HS7 & HS9). 2. Control board malfunction. 3. J12 harness (HS7 & HS9).
Hard to slice in manual mode.	<ol style="list-style-type: none"> 1. Knife dull. 2. Carriage tray assembly slide rod not properly lubricated. 3. Transport bushings worn. 4. Auto mode engaged or out of adjustment.
Wedge shaped slice.	<ol style="list-style-type: none"> 1. Product not stable in carriage tray. 2. Gauge plate not aligned. 3. Carriage tray assembly not aligned. 4. Transport roller out of adjustment.
Product going under top knife cover or being torn by top knife cover.	<ol style="list-style-type: none"> 1. Top knife cover not installed properly. 2. Top knife cover not fitted properly. 3. Top knife cover warped or damaged.

SYMPTOM	POSSIBLE CAUSE
Noisy.	<ol style="list-style-type: none"> 1. Knife shaft bearings. 2. Knife motor bearings. 3. Top knife cover rubbing knife. 4. Carriage tray rubbing gauge plate. 5. Carriage tray rubbing top cover. 6. Knife motor poly V-belt alignment. 7. Auto motor belt tension.
Indexing mechanism hard to turn.	<ol style="list-style-type: none"> 1. Index knob and cam not properly shimmed. 2. Slider mechanism out of adjustment. 3. Indexing cam broken or not properly lubricated. 4. Damaged index knob.
Meat grip hard to turn.	<ol style="list-style-type: none"> 1. Meat grip handle screwed on too tight. 2. Meat grip arm may need cleaning. 3. Bushings worn.
Transport hard to move or noisy during operation.	<ol style="list-style-type: none"> 1. Lubrication needed. 2. Overturn screw not adjusted properly. 3. Roller bearing worn. 4. Worn or damaged bushings in transport. 5. Interlock damage or wear. 6. Auto manual mechanism damaged or worn.
Top knife cover not remaining in position.	<ol style="list-style-type: none"> 1. Magnet malfunction. 2. Top cover not adjusted properly. 3. Ring guard out of adjustment.
Knife motor operating, knife not turning.	<ol style="list-style-type: none"> 1. Poly V-belt slipping, out of adjustment or damaged. 2. Knife shaft broken. 3. Pulley loosen on shaft.
Knife operating or starting at less than rated RPM (slow).	<ol style="list-style-type: none"> 1. Motor malfunction. 2. Poly V-belt slipping.
Knife motor slow to start.	<ol style="list-style-type: none"> 1. Motor malfunction. 2. Poly V-belt slipping. 3. Electric start switch. 4. Capacitor malfunctioning.

SYMPTOM	POSSIBLE CAUSE
Automatic slicing not engaging (HS7, HS9).	<ol style="list-style-type: none"> 1. Slicer not in automatic mode. 2. Auto manual switch malfunction or out of adjustment. 3. Auto drive motor wiring harness disconnected from motor or control board. 4. Auto drive Primary belt not properly aligned or in clip assembly. 5. Keypad malfunction. 6. Control board malfunction. 7. Auto drive motor malfunction.
On/Off problems.	<ol style="list-style-type: none"> 1. Keypad malfunction. 2. Keypad harness malfunction. 3. Control board malfunction.
Hard to start/stop.	<ol style="list-style-type: none"> 1. Keypad malfunction. 2. Keypad harness malfunction. 3. Control board malfunction.
Intermittent stopping.	<ol style="list-style-type: none"> 1. Gauge plate closed switch malfunction or out of adjustment. 2. Keypad malfunction. 3. Keypad harness malfunction. 4. Control board malfunction.
Auto drive motor shuts off during use (HS7, HS9).	<ol style="list-style-type: none"> 1. Auto drive motor overheated (Blink code). 2. Auto drive motor connections. 3. Control board malfunction. 4. Keypad malfunction.
Knife motor & auto drive motor shuts off during use (HS7, HS9).	<ol style="list-style-type: none"> 1. Auto/ manual switch malfunction or out of adjustment. 2. Gauge plate switch malfunction or out of adjustment. 3. Control board malfunction. 4. Keypad malfunction.
Shutter or hesitation present in stroke. Stroke not smooth (HS7, HS9).	<ol style="list-style-type: none"> 1. Roller Bearing damaged or worn 2. Debris on roller bar. 3. Carriage tray assembly slide rod not properly lubricated. 4. Control board malfunction. 5. Auto drive motor malfunction.
Carriage shaking in home position (HS7, HS9).	<ol style="list-style-type: none"> 1. Slicer isn't level. 2. Auto drive primary belt slipping or not aligned properly. 3. Control board malfunction.

SYMPTOM	POSSIBLE CAUSE
Knife removal tool doesn't fit.	<ol style="list-style-type: none"> 1. Knife isn't oriented properly. 2. Clamp plate is not properly aligned with mounting plate. 3. Knife shaft damaged or malfunctioned. 4. Knife removal tool damaged or malfunctioned.
Carriage tray assembly slams or bangs hard (HS7, HS9).	<ol style="list-style-type: none"> 1. Transmission assembly malfunction. 2. Loose belt.